GOVERNMENT OF ANDHRA PRADEH
ABSTRACT

Revenue (DM) Department - Standard Operating Procedures (SOPs) for Cyclone Management based on experiences of "Hudhud" and other Cyclones – Adoption - Orders – Issued.

REVENUE [DM.OP] DEPARTMENT

G.O.MS.No. 6 **Date:28.08.2015**

Read

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ORDER:

The National Disaster Management Authority (NDMA) has prepared and communicated elaborate guidelines for management of cyclones laying down implementation strategies with time frames. It is expected that the State Governments prepare a detailed Standard Operational Procedure (SOP) to be adhered to, taking into account regional specific issues, detailed set of actions with associated resource requirement and provision for tracking the accomplishment of a defined action.

2. Recent Cyclones like "Phailin" and "Hudhud" have shown that the expertise loss of life has been reduced significantly. The recent disasters have also provided an opportunity in identifying certain grey areas, especially in bringing back the conditions / facilities to pre-disaster status. The need for developing an objective structured response mechanism from gross root level, to minimize the gap period in restoring the normalcy, is evident during the management of the disaster.

3. Accordingly, the new SOP document is prepared listing the pre-defined action sets with time lines, department wise and level wise, attaching a responsible officer for each and every action during different phases of the disaster. The details of resource requirement and features to monitor the compliance of each and every pre-defined action are also included in the SOP document. The SOP document is finalized, after incorporating the comments and suggestions of all the Head of the Departments and the District Collectors, by the Andhra Pradesh State Development Planning Society (APSDPS) under the control of Planning Department, GoAP.

4. To support the management of the Cyclones, a web based tool has also been prepared by Andhra Pradesh State Development Planning Society (APSDPS) to track the compliance of pre-defined actions by various
Departments / Officers and generate department- wise / administrative control -wise reports during the event.

5. In view of the above, the Government hereby issues orders adopting the "Standard Operating Procedure document for Cyclone Management" as annexed to this order. All the Concerned departments and the District Collectors shall follow the procedures / actions listed in the adopted "SOP Document scrupulously.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF ANDHRA PRADESH)

J.C SHARMA
PRINCIPAL SECRETARY TO GOVERNMENT (DM)

To
All the Concerned Spl. Chief Secretaries/ Prl. Secretaries / Secretaries / Heads of Departments.
All the District Collectors in the State.

// FORWARDED BY ORDER //

SECTION OFFICER

SOP DOCUMENT

FOR

CYCLONE MANAGEMENT

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Executive Summary

Every year, India is witnessing innumerable number of disasters, both natural and manmade, leading to loss of life and property. Some of the disasters happen with lead time while others do not offer any lead time to prepare. The technological advancement and improved observational or monitoring networks give us an opportunity to understand the phenomena better than earlier. The better understanding of past events and data collected need to be converted into well defined fore-warning protocol, practices or procedures that limit the losses to a negligible level. This is possible only when the structured responses are built in the governing systems that monitor or manage these events. The success of managing any disaster mainly lies on the efficiency of the system in anticipating the impacts from such events and in accomplishing the pre-defined tasks in to two.

In earlier days, governments used to mainly focus disaster management as an activity starting one or two days before the occurrence to few days after the event, during which governments extend services like rescue, relief and rehabilitation. But now-a-days the rise in service conscious life styles across the country, demand the normal service levels immediately after or even during the happening of a disaster.

After the enactment of Disaster management act, in the year 2005 by Government of India and subsequent legislations that followed in every state of India, the preparation of 'Disaster Management Plans' at state level and district levels has become mandatory. A voluminous amount of effort has been put in by various stake holders in bringing proactive actions targeting limited loss to human lives. The efficacy of these are evident from recent events like 'Phailin' cyclone crossing Orissa in 2013, 'Hud Hud' cyclone that crossed Visakhapatnam in 2014 or the historical floods in Krishna river system in the year 2009. These events illustrated the expertise gained by the government systems in managing the events over the years and restricting the loss of life. However, these events also provided us an opportunity in identifying certain grey areas especially in bringing back the normalcy at par with the conditions that exist prior to the event. So, focus now need to be on 'Building Better' systems that include core infrastructure & key facilities to make them disaster resilient, improved risk transfer protocols, structured responses utilizing technological advancements.

Building disaster resilient infrastructure like underground cabling for power transmission, communication networks, transportations systems and risk transfer protocols to compensate

affected people at the earliest by adopting proper insurance policies both for agriculture and immovable property, need policy decisions or mechanisms after detailed discussions at various legislative forums. However, an immediate task that can be implemented is developing a structured response mechanisms starting from state level to grass root level, to remove subjectivity in decision making process during a disaster and to bring an objective outlook in disaster management. This has to be aided by a web based portal to help the disaster managers in planning, managing the events more efficiently with ease and without missing any of the pre-defined tasks.

Thus, the present document focuses on preparing a state specific detailed 'Standard Operating Procedures' (SOP) that details all possible actions for all level of officers involved at different time lines along with the details of resource requirement and features to monitor the compliance of each and every pre-defined action. The SOPs now prepared also concentrate on resource planning procedures that allows structured responses during preparedness phase for fixing identified weak links, on alert phase for evacuation, during the event phase for shelter management, search & rescue and post event phase for damage assessment and restoration of services.

1.0 INTRODUCTION

The world over time has been witnessing a series of disasters both natural and manmade. The diagnosis that followed each of these disasters motivates us to learn lessons from them to serve better. Over a period, it is observed that the response across the globe in dealing with a similar disaster is varying from place to place resulting variation in the scales of loss both in terms of lives and property. It is also observed that a severe intense disaster event in a country only create inconvenience for a shorter period but doesn't lead to infrastructure failure to great extent; at the same time similar event at other locations bring most of the housing units to rubble and take longer time to bring those areas back to pre-disaster levels. This analogy is applicable to any disaster that can be anticipated in advance. This highlights the importance given by respective governing systems in developing high level of preparedness and in offering time tested structured response systems to manage the events.

The state of Andhra Pradesh over the years has gained valuable experiences from a series of natural disasters. It is evident from the records that the death toll from natural disasters have drastically come down from 10000 deaths during 1977 'Divi Cyclone' to few tens in recent 'HUD HUD' cyclone or during the historical Krishna flood event of 2009. These records suggest that the official machinery has mastered the art of evacuation and extending relief assistance to the affected population during natural disasters. However, recent 'Hud Hud' cyclone that crossed an urban area taught us the requirement of building a structured response aided by technological advancements.

This SOP lays down, the specific actions required to be taken by various officials working at different levels along with the list of resources required for each of the action. The web based platform proposed helps the disaster managers at various levels to request, monitor, and mobilize and to record the compliance of each and every pre-defined action listed in the SOP. The modular approach adopted helps the disaster managers in assessing their requirements in more scientific manner. Placing some of the actions hitherto in the

list of actions on alert phase to preparedness phase improves the lead times for actual execution of the actions.

The instructions contained in this SOP should not be regarded as exhaustive of all the actions that might be considered necessary at this moment. It will also be necessary for each Department and Organization involved in providing Emergency Support Functions (ESF) to prepare detailed SOPs so as to translate each action point in a number of steps required to be taken by each of them in the manner it has been discussed in this SOP.

The SOP mainly details the actions during the following five phases of natural disasters to offer effective and efficient response.

1. **Preparedness Phase** – This is a very important phase of disaster management. As fail to plan in this phase is nothing but planning to fail during a disaster. This phase will include planning all necessary measures prior to the event to reduce ad-hoc behavior in managing the event and to improve the lead time for performing pre-defined duties or responsibilities with more ease and efficiency.

   This Stage includes updating the databases related to vulnerable areas, population, identifying building that can be used as shelters with required details, inventorying the requirements to fix the vulnerabilities identified well in advance, formation of teams for evacuation, medical assistance, restoration of services, attaching teams to each of the shelter, taking stock of facilities at identified shelters, listing of resources for tasks to be performed during the event along with the details of supply chains, updating the resource database with the details of their usability etc.

2. **'Early Warning' or 'On Alert' Phase** – This phase will include all necessary measures to provide timely, qualitative and quantitative warnings to the disaster managers to enable them to take preemptive measures for preventing loss of life and reducing loss/damage to the property. On the occurrence of a natural disaster or imminent threat thereof, all the concerned Agencies will be informed/notified for initiating immediate necessary follow up action.
3. **During the event Phase** – This phase will include activating Search and Rescue teams for extending help to people who are not covered during 'On alert ' phase or due to incidents that warrant emergency support. All necessary measures for smooth conduct of shelter management. Actions required for providing factual information to public and officials on the intensity of the current event.

4. **Relief Phase -** This phase will include all necessary measures to provide immediate relief and succor to the affected people in terms of their essential needs of food, drinking water, health & hygiene, clothing, shelter,
5. **Restoration Phase** – This phase will include all necessary measures to bring the affected services like communications, electricity, sanitation, water supply, road connectivity etc to normalcy.

2.0 Brief description of existing guideline

Soon after the NDMA was set up, a series of consultations were initiated with various stakeholders to facilitate the development of guidelines for strengthening cyclone disaster management. Senior representatives from government departments and agencies, academics, professionals and representatives of multilateral and humanitarian agencies and the corporate sector participated in these meetings. These meetings acknowledged several initiatives taken up by government agencies in the recent past which are significant and have far-reaching consequences. They also highlighted the need for a holistic and integrated strategy. On the basis of these deliberations, the NDMA has prepared these Guidelines for the Management of Cyclones.

The guidelines are divided into 9 chapters which cover the following domains of cyclone management

- Early Warning Systems
- Warning: Communication and Dissemination
- Structural Mitigation Measures
- Management of Coastal Zones
- Awareness Generation
- Cyclone Disaster Risk Management
    - Vulnerability Analysis and Risk Assessment
    - Spatial Decision Support Systems for Cyclone Management
    - Cyclone Disaster Management Information System
    - Capacity Development
- Response
- Preparation of Cyclone DM Plans

The guidelines elaborate each of the above domains in detail and also lay down the implementation strategies for each domain with timeframes.

2.1 Gaps in existing guidelines

Present guidelines are more of a cyclone management document that provides guidance to the state governments in preparing better for managing cyclones. It is expected that the state governments prepare a detailed SOP to be adhered to. The document emphasizes the need for designing department and region specific guidelines for cyclone preparedness. Present guidelines elaborate the Performa for capturing cyclone characteristics like wind speed, radius, pressure etc. Present guidelines qualitatively elaborate the situations faced before, during and after the cyclone event and generic measures to deal with those situations. Existing SOP document is more focused on the actions to be taken up for evacuation and the actions listed are like guidelines. Detailed set of actions with associated resource requirement is not included. No provision for tracking the accomplishment of a defined action is included.

2.2 Scope of the new guidelines

The new guidelines will be bringing out more detailed picture of the actions to be taken up based on scientific estimation of size of the disaster. The new guidelines will integrate the disaster characteristics to estimate the area and population likely to be affected for effective planning during a disaster. New guidelines will also provide quantitative estimates of resources required to execute each of those activities (before, during and after the event)

Thus, the new SOP document shall focus on listing the pre-defined action sets for various time lines department-wise, level-wise (State level, district level, block level, village level) attaching a responsible officer for each and every action, along with the listing of required resources for proper accomplishment of the action.

The main features of the now prepared SOPs include:

Pushing the activities related to team formation(restoration teams, medical teams, evacuation teams, shelter management team, damage assessment team etc), identifying shelters other than cyclone shelters, identifying weak links (weak Road stretches, weak

culverts / bridges, electrical and communications towers etc) requiring immediate attention etc from 'On Alert Stage' to pre-cyclone season phase.

- Identifying officials responsible for each activity during different phases of the disaster detailing emergency support functions (ESF) they are supposed to carry out along with the list of resources required for each such actionable item.

- Protocol to track the accomplishment of the pre-defined actions at various levels at various stages of the disaster so as to focus on the areas where the actions are incomplete or could not be taken up for various reasons.

3.0 Hazard and Vulnerability Assessment

Andhra Pradesh having a vast coast line of about 974 km is vulnerable to Cyclonic activity. Tropical cyclones are the most intense and devastating systems formed over the high seas. The major impacts due to cyclones at the time of a land fall or while moving parallel to the coast include coastal flooding due to storm surge, in-situ inundation due to torrential rains or damage to crops, infrastructure and crops due to fierce winds. These damages are worst, when the landfall region is in deltaic environment, because of highly intense economic activity and high population density. The disaster affects the poor the hardest. The relative losses suffered by the poor tend to be much higher than the rich, and ability of the poor to recover is often more limited.

The coastal areas of AP are also affected due to depressions and cyclonic storms that form in Bay of Bengal resulting torrential rains, storm surges and wind damages. Especially the torrential rains in the months of September to November i.e., towards the end of agriculture seasons would damage most of the crops that are close to harvesting stage. Recent past ranging over a decade suggest that the delayed arrival of monsoon activity resulting delayed sowing and delayed harvesting. Historical records show that maximum number of depressions / cyclones are forming in the months of September to November (63 depressions and 50 Cyclones as per Indian Meteorological Department Records).

A total of 443 mandals out of 664 mandals are identified in Andhra Pradesh (As per a study under a World Bank project) as areas prone to cyclone impacts out of these 77 mandals are coastal mandals.

3.1 Vulnerability Mapping:

The efficiency of disaster management mainly depends on how efficiently one can anticipate an event in an area under consideration. This identifies the vulnerability associated with the area under consideration. Once the vulnerability is know, it enables the disaster manager to plan the preparedness activities better to reduce vulnerability associated. Any error in identifying the hazard proneness and degree of vulnerability of an area, will greatly affect the preparedness levels in that area. So, the first and foremost task in disaster management is the mapping of vulnerable areas due to various disasters separately along with associated vulnerability levels. Previously these areas are usually identified based on the historical maximum data available in the case of natural disasters like cyclones and floods. But in recent times it is observed that the intensities of the events are crossing the historical maximums. So it is advised to map the vulnerable areas based on the simulation of events with maximum possible intensity.

In Andhra Pradesh state, these maps, in respect of cyclones and floods, are already prepared with maximum possible cyclone intensity and for 100 return period flood intensity.

4.0 Institutional Set Up For Implementing SOP

Presently, disaster management is being attended to by district and mandal level officials as a part time activity that mainly starts few days before a natural disaster and ends after a few days. But, only main streaming of disaster management in each sector will only reduce the associated vulnerabilities in coastal areas. This requires a permanent set up for disaster management at state level and district level. At state level, the SDMA shall be supported by a 24 X 7 functional organization in the name of State Emergency Operating Center equipped with all necessary infrastructure to co-ordinate and monitor the preparedness levels of District Disaster Management Authorities (DDMA) and to liaise with national agencies like NDMA in improving the preparedness levels in the state. Similarly, at district level there shall be a dedicated unit that tracks the all pre-defined actions to be carried out by various organizations to proactively prepare the vulnerable areas to face any natural disaster in a systematic manner resulting lesser damages and achieving zero casualty levels and a structured response at the time of evacuation, shelter management, attending restoration works or reporting inflicted damages.

4.1 Emergency Operation Centres

Emergency operating centers (EOCs) are the focal points in the disaster management system. Each EOC shall have five units namely. Logistics unit, finance unit, intelligence unit, information unit and resource management unit. As far as possible district Emergency Operating Centers shall be encouraged to plan all required resources within their respective districts to minimize the transportation costs. In case of deficiencies State Emergency Operating Centers (SEOCs) need to arrange reinforcements to fill the gaps from neighboring districts. Specialized services like NDRF teams, Air Force Units, Army Columns and Naval help lines need to be arranged by SEOCs liaising with national agencies like MHA, NDMA etc. Emergency Operation Centers are as follows:

- State Emergency Operation Centre - SEOC.
- District Emergency Operation Centre - DEOC, and
- Local Emergency Operation Centre – LEOC

4.2 State Emergency Operation Centre, SEOC

SEOC has a small permanent cadre staff and a continuous Duty Officer system to monitor events within the State on behalf of the State Authority. When activated in support of disaster- affected communities, the SEOC establishes communication with relevant DEOC for the purpose of coordinating necessary information and resource support. The SEOC provides 'situational awareness' of disaster events to the State Government and is accountable to the State Executive Committee.

The functions carried out in the SEOC include the:

Collection, collation and dissemination of information to the State government, the Minister for LR&DMD, the Chair and members of the SEC, Disaster districts and the public Provision of advice to the Disaster District Chair and Chairs of Local Committee, and Coordination of District and State Government resources in support of disaster affected communities.

4.3 District Emergency Operation Centres, DEOC

DEOC shall be a permanent facility provided within each District to support the District Authority during disaster events. Each DEOC is responsible to provide prompt and relevant information to both LEOCs and the SEOC concerning any disaster event occurring within their District. These centers are also responsible for the coordination of all local and state resources within their district and those allocated to it for disaster management purposes.

In particular, a DEOC acts as a bridge between Local Emergency Operating Center (LEOC), which is directly involved in all disaster management activities in vulnerable areas and the State Emergency Operating Center, by providing necessary direction and resources required to materialize the disaster management plans put forward by SEOCs to mitigate the vulnerability in long term and to manage disaster events more efficiently.

The main activities of a DEOC include Collection of information on a real time basis and disseminate the same to all stake holders especially to SEOC and relevant Local EOC, the public etc. It tracks the accomplishment of pre-defined action points by LEOCs and district level officers of various line departments and escalates the gaps if any to SEOCs to arrange reinforcements at required locations in time.

4.4 Local Emergency Operation Centre – LEOC

Local Emergency Operating Centers (LEOCs) are the lowest level of the disaster management that is directly interacting with the vulnerable population and conveying the information received from SEOCs and DEOCs to the people. The LEOCs at mandal level are supported by shelter level committees formed at each of the village or habitation level to take up the important activities like evacuation, search and rescue, shelter management, damage reporting etc.

Responsibility to respond to an event mainly lies with the local committee, coordinated through the LEOC. Requests and confirmation about resources and passage of information are passed between emergency operation centers to support the disaster management committees. These clear lines of communication allow for an effective and measured response to a disaster event.

Thus mandal level LEOC is responsible to provide prompt and relevant information to the DEOC concerning any disaster event or potential disaster event occurring within their area. These centers are also responsible for the coordination of all local resources as well as those allocated to it for disaster management purposes.

In particular, LEOC is responsible for:

- Collection, collation and dissemination of information to the DEOC, relevant local agencies and officers, and the public.
- Implementation of operational decisions of DEOCs
- Coordination of available resources including those allocated by SEOCs or DEOCs to support the disaster affected community.

- Report the compliance of the activities entrusted to it.
- Appraise the requirements and ground situations to DEOCs for better understanding of the event by DEOCs /SEOCs.

4.5 Village /Habitation Committee

A committee comprising of sarpanch and members of panchayat or members from local communities like fisherman etc shall be formed to look after the well being of cyclone shelter or identified shelter structure. The committee shall be entrusted with responsibility to take up annual maintenance of the shelter, keeping the shelter for alternate use during normal phase and to maintain the access to the shelter in accessible condition. The committee shall be encouraged to keep utensils required for cooking, arranging water storage space at shelter and create space for storing consumables like rice etc.

5.0 Standard Operating Procedures

5.1 Revenue Department

The Revenue Department is the nodal department for coordination and management of a cyclone event as it has a network of officials up to village level and officers of the department have magisterial powers. The department is assisted by the concerned line Departments/agencies to fulfill the responsibilities assigned. Pre, during and post action plans in coordination with the line departments, conducting relief, rescue and rehabilitation is the main activity.

Normal Phase:

1. Holding a meeting of DDMA and with district officials concerned quarterly in a year i.e. Dec/Jan, March/April, June/July, Sep/Oct for reviewing the precautionary measures to be taken as per the DM Plans.
2. Updating the District Disaster Management plan once every six months. This will be done by the specified officer by the Collector.
3. Ensure the communication systems are fully functional for easy and quick dissemination of information. Identify any additional requirement of equipment and operating personnel
4. Updating the list of Voluntary Organizations and NGOs their contact addresses in the district, and provide them to MROs, Panchayat, Secretariats and Municipal commissioners.
5. Verify the sufficiency of shelters in the vulnerable areas and identify extra shelter space if required.
6. Prepare a list of all cyclone shelters and other structures that can be used as Shelters along with the details of area, facilities available etc.,
7. Identify the vulnerable habitations that can be catered by each of the cyclone shelter
8. Prepare a list of all resource persons like retired officers with experience in managing cyclones within their jurisdiction along with their contact details.
9. Conduct Mock drills Twice a Year (April and September) involving all stake holders for improving community awareness and preparedness to face cyclone emergencies.
10. Identify vulnerable points/areas in the flood banks.

11. Prepare a list of all utility items for meeting any emergency, check their availability in sufficient quantities, make inventory and provide them for reference and use at all levels as per the standards mentioned in the annexure.
12. Discuss with all line departments concerned to finalist the evacuation routes for all vulnerable habitations and identified cyclone shelter to accommodate the people of that habitation.
13. Prepare a list of population requiring government assistance for evacuation, shelter, civil supplies during a cyclone event.
14. Form teams for evacuation, shelter management, civil supplies to the shelter etc
15. Estimate and verify inventory for cyclone management and their status i.e., whether they are in usable condition or not.
16. Prepare a list of strategic supply locations for each of the resources and the route plan for affecting the supplies from the identified supply locations.
17. Ensure that the line departments mainstream DM activities in their departmental Plans and also review the progress made during each year.
18. Ensure that training and capacity building is provided.
19. Keep details of availability of equipment such as power generators, tractors, bulldozers, transport vehicles, communication equipments, pump sets etc; their availability with Govt. and Private Agencies, for evacuation they are in operational condition.(District, Division, Mandal) keep ready on order move people in time before the hazard strikes.

On Alert Phase:

1. Estimate the area that is likely to be severely affected due to landfall of a cyclone based on the forecast provided and as per the guidance provided in the annexure.
2. Disseminate the information related to the forthcoming event to the people in the habitation to which a particular team is responsible and request them to get ready for possible evacuation taking required important documents and valuables.
3. The control Rooms shall be opened and activate all the teams and instruct them to get positioned close to their pre-defined areas of operation and wait for final instructions to trigger the pre-defined action points for each team.
4. Upon receipt of final instructions based on 24 hour or 48 hour forecast, commence the action items duly drawing resources from pre-defined locations.

5. Report the compliance of each of the activity entrusted to them.
6. In case of any shortage of any resource due to a surprise situation, appraise it immediately to DEOC for filling the gaps.
7. Complete the evacuation as per pre-defined evacuation routes.
8. Register the people arriving at the shelters and provide instructions to be following while staying in shelters.
9. Enquire the people about the missing members from their families to report to SAR teams for fool proof evacuation.
10. Seek support of SDRF/NDRF/Army based in the Severity assessed.

During Disaster Phase:

1. The Officer in-charge of the Control Room should maintain a record of incoming and outgoing messages. All the incoming messages should be sent to Collector and Joint Collector and in their absence the DRO.
2. All the warnings should be communicated immediately to all the district officers, Divisional officers, Tahasildar by-e-mail, wireless, Telephone etc. Record of the messages sent should be maintained.
3. Monitor and rescue people continuously by organizing search through Army, Navy, Air force, NDRF, SDRF, Voluntary and youth organizations by deploying navy boats and helicopters. Make
4. Arrangements for moving such affected people to the nearest relief camps.
5. They are in operational condition. (District, Division, Mandal)
6. Keep adequate number of vehicles ready at the nearest possible point/area to evacuate people in time before the hazard strikes.
7. Keep additional number of floats like tires, inflated rubber tubes, wooden planks, bam boost tied as small platform for people to use for floating during flood situation. (Community, village and Mandal)
8. Provide first aid and medical assistance for injured and sick people. Special care should be taken for the aged and disabled people, children and pregnant women.
9. Deploy Police personal and Volunteers to maintain law and order at all shelters, medical centers etc.
10. Regulate and reposition the external supplies coming from outside the affected areas.

11. Continuously provide authentic information to all people

Post Disaster Phase:

1. Provide information about the requirements in the affected area to the outside of the affected areas to receive required supplies.
2. Arrange receiving points for receiving external aid and channelize them based on actual requirements within the affected area.
3. Activate the restoration teams to commence restoration works.
4. Prioritize the affected area based on the severity of the event and accordingly reposition the restoration teams.
5. Monitor Restoration of Road and tele-communication, Electricity, Drinking Water Supply and House construction to the effected people on priority basis. (District, Mandal, Village)
6. Proper record should be made for the dead and missing persons and notify to the concerned authorities for providing compensation on short and long term basis.
7. Ensure Mass inoculation and vaccination programmers in the affected areas to prevent outbreak of epidemics by coordinating with Medical & Health Department. Additional medical facilities, hospital and PHCs may be planned and built for meeting increasing requirements.
8. Continue Search and disposal of the dead bodies and the carcasses. Ensure sanitation of highest order is maintained at relief camps and affected villages.
9. It is essential that spread of epidemics is prevented among people and animals. Respective Departments should take adequate measures by coordinating sanitation, drinking water and by vaccination. NGOs and other voluntary organizations should be encouraged to run community kitchens at relief camps and marooned.
10. The Dist. authorities and Line departments should provide comprehensive loss reports to the visiting State and central Govt. teams for arranging compensation. Record all the relief measures taken.
11. Supply of all essential commodities, such as rice, wheat, pulses, salt, kerosene, diesel etc. Should be ensured to all the habitats in the disaster affected areas.
12. Enumeration of Losses and Damages in a systematic manner, documenting and reporting the same.

Revenue Dept:

1. Strong and fail proof Communication Net Work to be established in Vulnerable areas
2. Route Maps of Cyclone Shelters to be displayed in Villages, wards and also on Website
3. Capacity Building of all Stakeholders is very critical

5.2. Police Department:

The Police Department is one of the key Government departments. Both in the normal times when no disasters occur and in times of disasters, this department is the department that first responds and assist in evacuation process and in maintaining law and order in and around shelters.

Normal Phase:

1. The SP will make arrangements for providing adequate number of mobile VHF sets up to District/Mandal/village Police stations for meeting the exigencies.
2. Ensure that Police stations are equipped with sufficient number of cars/jeeps fitted with wireless sets and trained personnel to handle them.
3. List out trained persons responsible at Dist., Mandal and Village level Police stations for disaster management activities with details of address and phone numbers. Provide this list to Dist Collector and concerned line departments.
4. Prepare a Dist. wise list of retired/reserve constables/drivers/ other use-full personnel. Their services could be used during future emergencies. The lists will be kept in all Police stations in vulnerable areas.
5. Plan and execute Dist. wide training programs for Police personnel with improved techniques for better management of disasters in future.

On Alert Phase:

1. The Police authorities shall provide VHF/Mobile wireless sets with operators in Control Room at Dist. Collectorate and at other temporary Control Rooms already setup. Ensure adequate numbers of VHF sets are provided at Mandal and vulnerable villages for effective communication.

2. Establish communication with Control Room. Wireless station to be kept round the clock if necessary wireless stations to be set near the villages. And keep the officers standby.
3. Collect information of vulnerable points and diversion routs for all Roads in the district from the engineering departments responsible for the maintenance and plan for traffic control.
4. Procurements of necessary equipment, storage of petroleum and other lubricants.
5. Pass effectively all communications of warnings and precautions received from Control rooms and media to the public through announcements and by loud speakers.
6. Shall obtain sufficient maps from the Collectorate regarding vulnerable village's areas/habitations. These maps shall be distributed to the sub-divisional officers/circle inspectors on as required basis.

During Disaster Phase:

1. Ensure passage of warnings and precautions to the people in affected areas of Mandals and Village Police Communication network. Alert teams and arrange to deploy them at risk points.
2. Keeping closes contact with District Collectorate, and collects all vital information and informs district authorities. And Support the search & rescue operations.
3. Superintendent of Police will coordinate with District Collector, DROs and other agencies for providing assistance to rescue and evacuate people in the affected areas of Mandals and Villages.
4. Provide guidance and assistance for forming task forces by MROs for evacuation, rescue and emergency relief operations.
5. Help revenue and medical department in transporting Injured and sick persons to Medical centers.
6. Ensure enforcement of law and order in the affected/evacuated villages and at shelters to avoid thefts and unlawful acts.
7. Assisting the community in organizing emergency transport for injured.

Post Disaster Phase:

1. Continue to pass warnings and precautions to the people in affected areas. Introduce latest transport and communication facilities.

2. Assist local officers in identifying the dead persons and for making proper records. Continue to Coordinate with DCs for rescue, relief and rehabilitation. Police Dept. should provide maximum services by getting additional persons from Police stations of unaffected Districts. They should further coordinate and assist NCC, Scouts, Guides, Army, Navy and Air force personnel in all rescue, relief and rehabilitation activities.
3. Update list of trained Police personnel at Districts. /Mandals and provide them to concerned authorities. And up-date lists of retired constables and drivers in each Dist. /Mandals for use during future disasters.
4. Provide assistance to people who are in a position to move from relief camps to their places where ever normalcy returns. Ensure strict maintenance of law and order in the affected/evacuated villages and at shelters.
5. Officers made available to inquire into and record of deaths, and make arrangements for post mortem of dead person with legal procedure for speedy disposal. Assistance to district authorities for taking necessary action against hoarders, black marketers and those found manipulating relief material and Provide security / band bust to VIPS.

5.3. Medical & Health Department:

Normal Phase:

1. District Superintendents of District Hospital shall prepare a Hospital Emergency management Plan to deal with mass causality during disasters.
2. Take precautionary measures for hospital safety during disasters since hospitals are life line buildings and need to serve uninterestedly. All structural and non- structural measures shall be taken up to make hospital safe.
3. Conduct mock drills in normal times to have an idea about hospital preparedness.

a. To identify the requirements of equipment and medical stocks that is needed during various kinds of emergencies.

4. To build network with referral hospitals, blood banks, ambulance services, etc.
5. Prepare list of people in each village requiring special attention like pregnant woman, people with chronic diseases, infants and senior citizens,
6. Prepare a list of essential and life saving medicines and identify their supply locations in case of urgencies.
7. Form medical teams and entrust the vulnerable village details to each of the team.
8. Provide the details of the location for extending medical assistance to the medical teams so that they reach immediately to the assigned locations on alert.

Pre Disaster Phase:

1. Prepare a list of precautions to be taken by the public before, during and after the disaster to ensure that they maintain normal health under adverse conditions during the disasters and arrange for propagation in the Dist.
2. DMHO to prepare and circulate in vulnerable areas by coordinately with District collectors, a list of precautions to be taken by the public before, during and after the disaster to ensure that they maintain normal health under adverse conditions.
3. Plan methods for quick transportation of seriously injured and sick person from disaster areas to specialties hospitals for effective treatment.
4. DMHO will have arrangements for providing funds to Dist./Mandal/Village medical centers during emergencies. DMHO will nominate a nodal officer from his Dept.to be

with MRO-MPDO, assist and coordinate all the medical relief activities during the disaster.

5. After receiving the alert, Dist. Medial Health Officer (DMHO) to activate mobile hospitals, emergency field medical teams, Para medical teams, surgery facilities, first aid kits etc. with sufficient equipments and medicines at Dist. Hospitals and PHCs. They should be in a position to move to the affected areas at short notice.
6. Keep teams of doctors ready with stocks of medicines required for relief to move to vulnerable areas in short time. Stock adequate quantities of medicines, life saving drugs, disinfectants, vaccines, inoculations and chlorination equipment.
7. Ensure availability of adequate doctors, trained personnel, medical stores and equipment for movement at short notice to vulnerable areas. Make provision of sufficient number of ambulances and transport vehicles. Plan additional space for extra beds in hospitals/PHCs.
8. Plan for establishment of field medical centers, mobile clinics, emergency operation centers and trauma counseling centers at vulnerable areas on short notice.
9. Plan for stocking sufficient quantities of blood of different groups at nearby Blood banks. Update the list of Govt. /private doctors and supporting staff whose services can be utilized during emergencies. Instruct them to be in readiness to move at short notice.

During Disaster Phase:

1. DMHO will be in regular touch with District Collector and Control room to know the severity of situation and extend medical services accordingly in the affected areas. A medical control room at district and division levels shall be established with help lines.
2. Where ever necessary seriously injured and sick persons are shifted to Dist./State/Referral hospitals for specialist services. Provide fist aid and medical assistance for injured and sick people. Special care should be taken for the aged and disabled people, children and pregnant women.
3. DMHO will move maximum number of medical and Para medical teams, ambulances and mobile hospitals with adequate equipments, medicines etc. to the affected area and provide medical assistance round the clock to the people. Each team should be allotted specific place in the disaster area and specified relief centers.

4. DMHO should take all measures to ensure that replenishments are made continuously. DMHO will requisition the services of medical teams from unaffected Districts. For use in disaster affected areas. DMHO will liaise with State for providing additional specialists teams and equipments from State headquarters and other States.
5. Ensure that sufficient numbers of temporary medical camps are set up in the affected areas. DMHO will take maximum precautions to prevent breakage of epidemics/water borne diseases in the disaster areas.
6. Utilize the services of private doctors, allopathy, ayurveda and Homeopathy in the disaster-affected areas. Organize mobile health units and temporary hospitals for providing medical relief and for preventing break of epidemics. Teams of specialist Doctors will tour affected areas with adequate medicines and Equipments for providing on the spot specialist services.

Post Disaster Phase:

Role of Medical Department

1. Ensure that DMHO and other medical authorities at Dist. And Mandal levels are in constant touch with Control rooms, know the latest situation and expand medical facilities accordingly. Ensure continuation of educating people on precautions to be taken for maintaining hygiene and health in adverse conditions.
2. DMHO to continue provision of medical facilities at the affected areas and relief camps till the people return to their places. Ensure adequate measures to continue for preventing break of epidemics by using disinfectants and chlorination.
3. DMHO will obtain information on the medical relief provided at disaster areas, quantities of medicines used, the quality of services provide by medical and Para medical staff, the adequacy of medical facilities available at vulnerable areas and forward to State for future action.
4. Maintain a record of persons treated with full details and particulars for reference at later date. Update and send plans for additional requirement of facilities, infrastructure to be created at vulnerable areas. Prepare a document on the event and send to State authorities for reference in future.

5. Ensure that DMHO and other medical authorities at Dist. And Mandal levels are in constant touch with Control rooms, know the latest situation and expand medical facilities accordingly.
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8. Maintain a record of persons treated with full details and particulars for reference at later date. Update and send plans for additional requirement of facilities, infrastructure to be created at vulnerable areas. Prepare a document on the event and send to State
9. Authorities for reference in future.
10. Vector borne like malaria, filarial, dengue, chickengunia, Japanese encephalitis, sprinkling of bleaching power and lime on the drains and roads to prevent gastro enteritis with the help of Sanitation team.
11. During the natural calamities the immune states of the children will reduce naturally. Hence there is need of Post disasters immunization like Polio, Measles and Vitamin- A.

Medical & Health:

1. Back up Electricity in PHCs and Referral Hospitals
2. Hospitals to own generators

5.4. Animal Husbandry Department

Normal Phase:

1. Demographic profile of families engaged in fishing, fish farming, poultry, dairy, sheep, goat and pig rearing, their location, unit size etc will be mapped and provided to Mandal and Village levels. The fishing activity includes, fishing on sea, rivers, canals, lakes, tanks, brackish waters etc.
2. Cattle rearing community at vulnerable places will be advised not to go for heavy animals, since shifting them during disaster period would be difficult. Plan and implement schemes for educating fishermen and animal rearing communities of the vulnerable villages, on the measures to be taken before/during/after cyclones to avoid loss of lives and properties and animals.
3. Sufficient publicity be given at villages through visual education, training and mock drills. Identify safe shelter places for animals with adequate fodder and water facilities in all vulnerable villages for use during disasters.
4. The department has to prepare resource inventories, list of shelter places, medical needs, awareness generation plan, etc. The mitigation measures for life loss shall be detailed worked out.
5. Form teams to extend services during the disasters.

Pre Disaster Phase:

1. District authorities will activate control rooms. Ensure that warnings and precautions are properly received by the vulnerable communities and prepare them to face the disaster.
2. Demographic profile of families engaged in fishing, fish farming, poultry, dairy, sheep, goat and pig rearing, their location, unit size etc will be mapped and provided to Mandal and Village levels. The fishing activity includes, fishing on sea, rivers, canals, lakes, tanks, brackish waters etc.
3. Cattle rearing community at vulnerable places will be advised not to go for heavy animals, since shifting them during disaster period would be difficult. Move cattle, sheep, goats, pigs etc to safer cattle yards from vulnerable areas and provide fodder and
4. Water

5. Ensure that boats and other equipments of fishermen are moved to safer places and secured in association with fisheries department. Staff meant for emergency duties will be sent to their respective places of work and will be ready to undertake rescue and relief measures.
6. Provide medical help to distressed animals.
7. Check out a strategy to deal with drought situation so as to ensure continuous supply of Fodder and water to the animals.

During Disaster Phase:

1. The control rooms and warning centers at Districts will provide/send warning and other information to all affected areas. The dept will ensure that flood warnings and precautions are properly received by the vulnerable communities and face the disaster.
2. Mandals and Villages will arrange for shifting fishermen staying very near the sea and at low lying areas to safer places and relief camps. Ensure that boats and other equipments of fishermen are moved to safer places and secured.
3. Ensure that poultry farms take measures to safeguard their poultry birds and equipments. Move cattle, sheep, goats, pigs etc to safer cattle yards from vulnerable areas and provide fodder and water
4. Arrange for providing medical help to distressed animals. Ensure sufficient quantities of medicines and vaccines are stored at places nearer to the vulnerable villages. Arrange for visits of veterinary doctors to affected villages.

Post Disaster Phase:

1. Ensure that control rooms and warning centers at Mandals will continue sending messages to the affected villages.
2. Plan and implement schemes for educating fishermen and animal rearing communities of the vulnerable villages, on the measures to be taken before/during/after floods to avoid loss of lives and properties and animals. Sufficient publicity will be planned at villages through visual education, training and mock drills.
3. For increasing the awareness among fishermen community, provide training/conduct mock drills.

4. Coordinate for veterinary help to distressed animals. Ensure supply of medicines and vaccines at places nearer to the vulnerable villages. Coordinate for mass vaccination wherever necessary. Plan for strengthening storage facilities for medicines and vaccines.
5. Private Doctors to establish veterinary service centers in vulnerable areas. Plan for more mobile health units for cattle.
6. Provide sufficient food/fodder/water for animals kept at safe yards. Coordinate for veterinary help to distressed animals. Ensure supply of medicines and vaccines at places nearer to the vulnerable villages.

Animal Husbandry:

1. Animal Cyclone Shelters to be constructed
2. Sufficient Feed to be stored
3. Local Bodies to take care of removal of Carcass of dead animals

5.5. Agriculture Department

Agriculture Department always sustains losses/damage when floods and cyclone occur in the State. The quantum of losses is proportional to the intensity, time and duration of the hazard. It is difficult to prevent such losses but remedial measures can be taken to save the crops and if this is not possible to go in for alternative measures suitable for the area and type of soil.

Normal Phase:

1. Prepare a list of crop details village / habitation-wise with details of crop sown, area sown, owner of the farm, insurance etc.,
2. Plan and equip the Dist. to have latest technologies to assess the standing crop position, with reference to probable disaster, mechanism to advice farmers for safe guarding and in case of losses, procedures to estimate the damages and to inform State authorities.
3. Ensure that regular feedback is provided by Mandals indicating seriousness of disaster, level of distress, position of standing crop and likely losses.
4. Districts will prepare a long term action plan for meeting relief requirements of farmers in vulnerable areas.
5. Prepare a contingency plan ready to minimize the crop loss in case of a cyclone.

6. Create awareness among farmers on various kinds of threats and possible mitigation measures.
7. Update credit facilities and crop insurance details from financial institutions.

Pre Disaster Phase:

1. Collect standard database village wise, crop wise, survey number wise, former wise data from village revenue officer (VRO)
2. Formation of village, mandal, division, and district level disaster team with other departments consisting Agriculture, veterinary, Sericulture, Fisheries, Horticulture, Revenue, Panchayathi Raj, Irrigation, and Drainage etc.
3. Contingency crop plans prepared by ANGRAU may be made available up-to Mandal level in the month of May. Prepare vulnerability maps of villages likely to be prone in the Mandal based on previous year's data (viz. irrigation sources wise area prone to inundation).
4. Existing seed storage godowns (Seed store/oil seed godowns etc) are to be repaired for storing of seeds during calamities. Formation of seed banks with the help of RMGs. RMGs are encouraged to construct puccagodwons to store harvested produce under Govt. schemes (Grameen Bandar Yojana Scheme)
5. Ensure that sufficient quantities of agricultural inputs such as seeds, fertilizers, pesticides, equipments and fodder are available at three levels. If necessary, they will be supplied at short notice at vulnerable areas.
6. Move and position the staff meant for disaster management duties at their pre decided places. They should move in villages and advise farmers on precautions to be taken for protecting the standing crop.
7. The nodal officer should ensure that suitable instructions are issued to their field officers including their duties and function before, during and after disasters.

During Disaster Phase:

1. Coordinate with Mandals and Villages to get feedback on seriousness of disaster, level of distress, relief provided, steps taken for saving maximum standing crop, extent of flooded agricultural lands and estimated loss of crop.
2. Dist. will direct Mandals/Villages to be in close coordination with other line departments to ensure adequate relief is provided to the farming community.

Post Disaster Phase:

1. Village level team should visit the vulnerable cropped area and give suitable technical advices received from MAO's.
2. Ensure that adequate and timely relief/credit is made available to farmers for purchase of agricultural inputs through Govt. /private and easy loans through banks.
3. Seeds, fertilizers and pesticides should be provided at subsidized rates. Ensure all relief measures, credit facilities and inputs are made available continuously to farmers till their next crop is harvested.
4. Develop data base village wise crop wise, irrigation, source wise, insurance details, credit facilities tec., with an objective of forecast of damages due to disasters.
5. Fodder should be supplied in sufficient quantities at low prices.
6. The enumeration team while enumerating the crop loss, should also record the names of the tenant farmers, along with the owners name. They should also record extent cultivated byte tenant farmer.

Agriculture Dept:

1. Village level Crop Patterns and extent to be mapped in every season in advance to assess the damage easily.
2. Separate budget provision for Enumeration

5.6. Panchayath Raj Institute (PRIs) Department

Normal Phase:

1. Convening the special meeting of Gram Pahchayat inviting Community Based Organs, Youth Groups, Village elders, NGOs, and other organizations institutions and officials working in the Gram Pahchayat to discuss on the management of disasters and constitution of Gram Pahchayat Disaster Management Committee.
2. Energize the Control Rooms to monitor warning signals and to pass on necessary information through wireless, HAM Radio sets, etc.
3. Identification of Vulnerable areas discusses for various activities and prepare database.
4. Identification of Cyclone shelters/ relief centers for shifting people / livestock to safer places. Ensure periodic inspection and repair of shelters and other buildings identified for running relief camps.
5. The plans prepared for disaster management for implementation at Mandal and Village levels will include all works related to drinking water, minor irrigation canals, minor tanks and bunds, safe shelters, sanitation, food other essential items. These plans will be sent to district and mandals much in advance for implementation.
6. Direct Districts. Mandals and Villages to implement plans for provision of safe drinking water. Lay down procedures and mechanism for implementing long term sanitation requirements and their maintenance.
7. Plan and provide sufficient number of hand pumps, bilge pumps and other suitable equipment to drain water quickly. Drinking water hand pump sets should be planned and constructed about the normally expected flood level.
8. A list of water tankers available with public/private departments /agencies will be prepared with requisite details. Their services will be used during floods for supply of safe drinking water.
9. Depending on the topography, high and low levels of lands in Mandals and Villages, the natural drainage routes for rainwater will be identified. They will be suitably mapped. Steps will be taken to ensure that these routes are maintained and never blocked.
10. Private buildings will be identified suitable for use as shelters by the departments at Districts. And Mandals. Prepare list of such buildings and provide them to necessary authorities.

11. Conduct training programmer and Mock drills on the disaster management for the following:
    - Members of Gram Panchayath
    - Members and officials of other institutions.
    - NGOs and other voluntary organization.

Pre Disaster Phase:

1. District level committee shall have public representatives and the will participate and take steps for facing the disaster. The control room will be activated.
2. Mapping of resources of NGOs/CBOs/ Charitable Organization to arrange training programmes and to make special arrangements for evacuation of old, handicapped, children, expectant and lactating mothers.
3. Identification of alternative road/ path/ route to reach the cyclone centers/ relief centers safely. And constitute volunteers teams in consultations with the members present in the Gram Panchayath meeting habitation wise.
4. Ensure cyclone shelters and other buildings identified for running relief camps are kept ready for operation. Maintain the shelters and other identified public buildings in good condition ready for use.
5. Direct the 3 levels to take advance action for provision of safe drinking water during crisis. Make arrangements for maintaining continuous supply and availability of food,
6. Kerosene and other essential items.
7. Direct line authorities to position sufficient number of hand pumps, bilge pumps and other suitable equipment to drain water quickly.
8. Alert the Dept. to position water tankers available with public/private departments/agencies for providing safe drinking water in the likely affected areas.
9. Direct authorities to ensure that the natural drainage routes are kept free in all vulnerable villages to allow flooder to drain quickly. Rural Water supplies should be maintained efficiently to avoid disruption. Chlorine/bleaching powder should be stocked in sufficient quantities.
10. Identify low-lying areas and arrange for bailing out water in case of inundation. Clear all the drains to ensure free flow of storm water.

11. The village Disaster management committee should be in touch with the revenue authorities convened for supply and storage of essential items like K.Oil, food grains saws, axes, old tires, ropes, lantern lights, gas lights, etc and keep them ready on hearing cyclone warning.
12. The village Disaster Management Committee shall procure tarpaulins other materials from agricultural market committee, corporations and locally, to meet the future requirements.
13. Identity dried branches of trees of roads sides and cut them to avoid accidents, the dried up wood stored and may be used at cooking centers.
14. The Gram Panchayath shall take steps to keep the required sand bags and wooden poles at the vulnerable points like M.I of tanks, ponds etc.
15. The Gram Panchayath shall clean the drainage system and arrange additional drainage system to drain the excess water.

During Disaster Phase:

1. The control room will be further strengthened.
2. Control Room will monitor warning singles / precautions and pass the information to the people through wireless, HAM Radio sets.
3. Direct the 3 levels to take suitable action for provision of safe drinking water in affected villages and at relief camps through tankers and other means.
4. Coordinate with line authorities to drain water quickly. First priority for water pump hoses, sub stations hospitals etc. Second priority will be residential areas. Ensure that flood water drains out through natural drainage routes by removing obstructions if any.
5. Direct officials to make up stocks of essential food items, medicines etc. required for distribution to affected villages and relief camps. Similarly for items required for repair works and for de- watering.
6. Keep ready the required rice and other provisions at centers, along with Civil Supplies Department, and required fire wood, gas, gas stoves. Assist Civil Supply Department in keeping ready the requirement in keeping ready the required rice and other provisions at centers and required fire wood, gas, gas stoves.
7. Keep ready for first aid teams with required medicines by contact the PHC, M.O. and Mandal Tahasildar/ MPDO and position them at the cyclone centers/ relief centers.

8. Arrange vehicles for transport of people from the low lying areas to cyclone shelters. Assist Revenue department in evacuating the people from low lying areas to safe places.
9. Inform the people through mikes, tom-tom through the volunteer teams and help people prepare for to evacuation from the areas.
10. Inform the people to drive away the cattle sheep and goat to the safe and elevated places.
11. Make arrangement for the cooking and supply of food at the cooking centers identified. And keep all the sanitation material at cyclone centers/ relief centers.

Post Disaster Phase:

1. Removal of dead bodies, animal carcasses with the help of Revenue, Police and Medical Departments. Arrange for their disposal/ cremation, to prevent any epidemic.
2. Planning and implementation of Rehabilitation of affected people, Rehabilitation of affected people; Repair and Reconstruction of damaged houses, physical infrastructure,
3. etc., and return to normal economic activities including farming etc, should start immediately
4. Assist Revenue department in the assessment for dead persons, livestock and damages to houses and properties of individuals, agriculture, community assets.
5. Supervise the preparedness levels of Gram Panchayath by inspecting the vulnerable houses, roads, buildings, water sources contingency plan etc.
6. The long term mitigation plan should integrated normal development plan in such manner that protective and preventive measures against the disasters are included in the implementation of all development projects under each and every sector.
7. Identification of material availability locally for construction of temporary sheds.
8. Ensure communication facilities such as Telephone, cell phones, wireless sets and their functioning. And procure sanitation material like lime, phenyl, bleaching power, with equipment.
9. The repair and reconstruction activities should be integrated with the long term mitigation planning so that the quality of reconstruction and repair is in consonance with the specifications provided for disaster resistant structure.
10. List out donor's philanthropists, trusts, and request them to assist in relief and rehabilitation measures.

11. Mapping of Hazards and vulnerability should be initiated, if it is not done and detailed maps should be prepared for each block and district and should be placed in both district and blocks.
12. Control room will continue its activities. Restore normal communication, power and drinking water facilities on priorities.
13. Coordinate with line authorities to drain water quickly. First priority for water pump houses, sub stations, hospitals etc. Second priority will be residential areas.
14. Special funding should be made available for the construction of physical infrastructure to include disaster resistant technologies particularly in the construction of Houses, Roads, Electric Transmission Lines, Drinking Water facilities, Bridges and Culverts, Tele – Communication Irrigation Canals, Tanks and Reservoirs, etc., for the sections which are most vulnerable. And supervise all construction and developmental activities.
15. District Officials to make stocks of essential food items, medicines etc and continue supply to affected people and relief camps. And make arrangement supply of food, kerosene and other essentials items.

5.7. Roads and Buildings Department

Normal Phase:

1. Private buildings will be identified suitable for use as shelters by the departments at Districts. And Mandals. Prepare list of such buildings and provide them to necessary authorities.
2. Direct Dist. and Mandal authorities to inspect and identify roads, bridges, culverts and buildings which are vulnerable for floods and repair/strengthen them.
3. The identified weak bridges and culverts weak once should be demolished and the new ones are to be constructed. Buildings which are in collapsible stage should be demolished. New roads/repair of roads should be carried out. The roads/buildings should be made hazard proof.
4. Ensure that building codes are strictly followed by public in disaster prone areas. They should be made mandatory.
5. In case of heavy rains, the roads are prone to breaches. Vulnerable points have to be listed out in advance and indicated in maps. They shall be reviewed every year before the monsoon and repair accordingly.
6. Ensure that the new construction does not block natural drainage lines. Enough culverts etc. may be provided.
7. A good network of motorable roads should be constructed in all vulnerable coastal areas. This not only facilitates quick evacuation at the time of need, but also the supply of relief to the needy, in the aftermath of flood.
8. Retrofitting of buildings, building foundations and structures should be made as a component of disaster management policy, applicable in vulnerable areas. Suitable guidelines may be issued for retrofitting.
9. Dist. authorities will inspect and identify roads, bridges, culverts and buildings which are vulnerable for floods and repair/strengthen them.
10. The identified weak bridges and culverts should be demolished when the new ones are constructed. Buildings which are in collapsible stage should be demolished. New Roads/repair of roads should be carried out. The roads/buildings should be made hazard proof.

11. Ensure that building codes are strictly followed by public in disaster prone areas. They should be made mandatory.
12. In case of heavy rains, the roads are prone to breaches. Vulnerable points have to be listed out in advance and indicated in maps. They shall be reviewed every year before the monsoon and repair accordingly.
13. Preparing the list of resources JCBs, road clearance equipments.

Pre Disaster Phase:

1. S.E shall conduct the disaster preparedness meeting twice in a year and advice the field functionaries to gear up for the situation such meetings shall be organized well advance before the onset of monsoon.
2. The AEE shall keep the available machinery such as Power saws under the control of one competent Work Inspector/ Gang mazdoor who frequent trails so that the available
3. Machinery will be in working condition, at all times.
4. The Dy. EE shall verify the working condition of the machinery once in three months.
5. Shelters and private buildings identified for use as relief camps should be checked and strengthened where ever necessary. Special attention should be given for securing weak doors, windows and compound walls.
6. Direct Districts. And Mandals to make a final check of roads, bridges, culverts and buildings and carry out urgent repairs where ever necessary.
7. Shelters and private buildings identified for use as relief camps should be checked and strengthened where ever necessary. Special attention should be given for securing weak doors, windows and compound walls.
8. Dist. authorities to make a final check of roads, bridges, culverts and buildings and carry out urgent repairs where ever necessary.
9. Shelters and private buildings identified for use as relief camps should be checked and strengthened where ever necessary. Special attention should be given for securing weak doors, windows and compound walls.
10. Move machinery and equipment meant for repair of roads and buildings. And for removing obstructions nearest to the vulnerable areas for use during emergency.
11. Staff on leave should return to their Head Quarters.
12. No leave shall be sanctioned at the time of disaster.

During Disaster Phase:

Observation of the cyclone movement and situation

1. Alerting of field teams.
2. Enquiring the availability of machinery and requesting them to keep them ready for deployment were ever necessary.
3. Deputing of field staff from non affected areas to assist staff in likely affected areas.
4. Preparation for post disaster activities.

Post Disaster Phase:

1. Ensure restoration of traffic movement where ever possible by quick repair of breaches. Inspection of roads and removal of traffic obstruction. And inspection of roads for assessment of damages and reporting in higher authorities and preparation of its estimations.
2. Coordinate with State and plan for providing adequate number of drains by the side of roads, particularly considering the past experience.
3. Sanction and entrustment of temporary restoration works. And updation of maps
4. Steps will be taken for raising the stretches of roads passing through low areas and increase drainage facilities with prior approval of the State.
5. R&B/PRE will create a reliable road network that connects vulnerable areas and selected nodal centers, from where transport, relief and rehabilitation operations can be undertaken during future disasters.

R&B Department:

1. Bailey Bridges to be fabricated for ready use. Already 8 such proposals are under way
2. Power saw Cutters, Earth Movers, etc can be procured by Department itself for emergency use.
3. Weak Roads & Bridges are to be identified and mapped so that immediate restoration can take place

5.8. Irrigation and Command Area Development

Normal Phase:

1. Materials such as empty cement bags, sand, metal, stone bellies etc. will be stocked in adequate quantities in all flood stores for immediate use before and during floods.
2. Ensure no human encroachment near the drains and settlements in the low-lying areas.
3. Ensure repair /restoration of canals, Irrigation tanks and desalination of damaged agricultural fields and drainage channels.
4. Ensure that all the irrigation drains are cleared of blockades and obstructions.

Pre Disaster Phase:

1. Catchments maps are to be ready for all irrigation sources. And all the vulnerable locations in the sources are to be identified along with the Water Users Associations / Distributor Committees / Project Committees.
2. Check and repair the main Irrigation canal system and control structures.
3. After receipt of first flood warning discharge through dams all lower riparian rights villages downstream of the dam are required to be given the information along with District Collector/ RDO/ MRO of the concerned district .
4. During the closure period the irrigation staff has to procure required stores i.e. empty gunny bags, sand, bullies of 1m length with 100mm dia, gaslights, bamboo thatties, gamelas, country twine, needles, crow bars, hammer with handles, torch light etc.
5. One flood store will be maintained under the control of each Dist. Collector. The flood store will keep empty sand bags, dewatering pumps, diesel generators, tarpaulins, tents etc.
6. The Asst. Engineer should make arrangement to intensify patrolling of river banks round the clock and as soon as the reservoir comes to full tank level and the spillway gates are to be operated to avoid further storage in the reservoir with intimation to Revenue Authorities.
7. Before cyclone / flood the AEE / DEE will inspect each and every vulnerable point and the areas prone for inundation for taking precautionary temporary measures and the summary of all actions intimated to the higher officers.

8. Materials such as empty cement bags, sand, metal, stone bellies etc. will be stocked in adequate quantities in all flood stores for immediate use in the event of disaster.
9. Strengthen the weak bunds of all irrigation sources and arranges for patrolling weaker points to avert breaches.
10. Move all emergency duty officers/staff and equipments to vulnerable area.
11. They should be ready to take up emergency works.

During Disaster Phase:

1. Materials such as empty cement bags, sand, metals, stone bellies etc. will be stocked in adequate quantities in all flood stores for immediate use for plugging the breaches.
2. After receiving 1st warning the status of flood is to be intimated to the District Collector, RDO, and NGOs, MRO to address public by in all adjacent villages & it is to be intimated to AIR and for live telecast channels.
3. Strengthen the weak bunds of all irrigation sources wherever necessary to prevent breaches. Assistance from local people will be used.
4. After receiving cyclone/ flood warning from catchment area to source utilization location the departmental field officers have to inspect all the sources jurisdiction wise including luskers.
5. After flood / cyclone warning, control room are to formed at SE/EE/ offices respectively and required vehicles are to be kept at store sheds to carry the materials to the spot required. Ensure that all the irrigation drains are cleared from obstructions.
6. Continue to clear the mouths of all drains for free flow of flood water.

Post Disaster Phase:

1. After floods recede necessary arrangements have to be made to the farming community to safe guard agriculture by making temporary restoration arrangements to the affected irrigation sources, which include forming ring bunds, close breaches, removing of all shoals and rectifying damages to structures.
2. The officers involve for restoration of post disaster damaged irrigation sources are AEE/ AE, DEE, EE, and SE. and identify the breaches and take up restoration work.

3. Restore the damaged infrastructure. Attempts will be made for farming community to start agriculture within minimum possible time to bring the socio economic life back to normal in the affected areas.
4. Review and request for construction of dams, check dams and new irrigation/drainage canals for long term improvement and for sustained economic growth.
5. Suggest measures for strengthening the river banks and canal bunds to avoid breaches.

5.9. Fisheries Department

Fisheries department has an important role in cyclone management.

Normal Phase:

1. The fisheries development officer shall check the functioning of life saving appliances and provide and render services of such equipment.
2. List to be prepared active fishermen, families with Livelihood activities and complete address for identification in case of emergency.

Pre Disaster Phase:

1. Demographic profile of families engaged in fishing, fish farming. The fishing activity includes, fishing on sea, rivers, canals, lakes, tanks brackish water etc.
2. Establish control room and a monitoring Cell with operational field teams with available staff; assist district administration and co – ordinate with line departments.
3. Arrange medical relief to fishermen. Provide medical help to distressed animals. Stock sufficient quantities of medicines and vaccines at places nearer to the vulnerable villages.
4. The FDO and fisherman elder will elder ill identify the vulnerable fishermen colonies likely to be damaged by floods/ cyclones including the assessment of emergent requirement of food and drinking water supply, kerosene, clothing, medical aid etc.
5. List of NGOs involved with fishermen activities and their capability for providing assistance.
6. Identification of vulnerable habitations, creek points, likely marooned areas, rate of inundation and receding waters, identify the locations where fishing craft are anchored and prone to damages.

7. Fisheries department should educate fishermen families to stop sea fishing activity soon after receiving first flood warning shell send early warning to fisherman communities.
8. Up keeping of the available life saving appliances, communication equipment i.e., life jackets, life floats, Very High Frequency communication sets, cyclone warning kits etc.,
9. Assessment of probable damages to the boats ad nets, fishermen huts, house hold articles in terms of quantity and value i.e. onetime pre cyclone survey.
10. Constitution of teams with officers/ NGOs for pre, during, and post disaster activities.
11. Ensure that boats and other equipments of fishermen are moved to safer places and secured. And ensure positioning the relief boats and expert swimmers, life saving appliances at vulnerable points for preventive and rescue activities.
12. Telephone numbers and other contacts of Officers, village elders and president / secretaries of fishermen Cooperative Societies have to be collected and shall be provided to all concern up to habitation level.
13. The area fisheries officer shall check the functioning of life saving appliances ad provide and render services of such equipment.
14. List to be prepared with active fishermen, families with Livelihood activities, Swimmers, rescue boat particulars and complete address for identification in case of emergency.

During Disaster Phase:

1. Mandal and villages will arrange for shifting fishermen staying very near the sea and at low lying areas to safer places and relief camps.
2. Ensure that boats and other equipments of fishermen are moved to safer places and secured.
3. Dissemination of cyclone warnings, weather reports to the fishermen localities, fishing boat operator's departmental personnel and liaison.
4. Alerting fishermen elders and fishing boat operators at sea to return to shore.
5. Collect data of number of boats operating at sea and guide them to a probable route of escape for safe return.
6. Evacuation of field staff / volunteers from other safe areas to provide assistance in most vulnerable areas.
7. Mobilize expert swimmers to the cyclone / flood hit areas. And alerting the teams for post disaster activities.

8. Arrange for providing medical relief to fishermen.

Post Disaster Phase:

1. Plan and implement schemes for educating fishermen communities of the vulnerable villages on the measures to be taken pre/during/post disasters to avoid loss of the lives and properties.
2. For increasing the awareness among fishermen community, provide training/ conduct mock drills.
3. Coordinate for medical relief to fishermen. And plan for strengthening storage facilities for medicines and vaccines.
4. Ensure quick disposal of carcasses.
5. Seek help of Coast Guard in case of any emergency for search operations and asses the casualties if any
6. Asses the loss / damages to household articles, fishing implements.
7. Visit of teams to the affected fishermen habitations, shore areas to inspect the type of loss/ damages to the fishing boats and nets.
8. Preparation of estimated value of such loss/ damages
9. Consolidation of the assessed losses/ damages and reporting.
10. To sanities all water sources utilized by the fishers in post disaster and clearance of debris/mud accumulated during disaster.

5.10. Rural Water Supply

Pre Disaster Phase:

1. The department shall identity the non – functioning schemes or Hand Pumps, repairs to platforms and Tap fountains including its surroundings in coordination with the GP level teams and action is to be taken to get them repaired.
2. The Gram Panchayath shall be suitably instructed the DPO/ CEO to utilize the funds for restoration of Water Supply sources on top priority
3. The department will identify the vulnerable water sources which are to be chlorinated before and after the Disaster with the help of Gram Panchayath teams.
4. The Hand pumps existing in the low lying area shall be raised to the expected maximum flood water level by raising the casing pipes and plat forms to avoid possible
5. Contamination.
6. Keeping ready stock of Liquid Chlorine / Bleaching power with the Gram Panchayath and to observe proper chlorination being done regularly
7. Ensure that identify the Safe sources in the Gram Pancayath area and adjacent areas where safe water can be brought in case of submergence of the area.
8. The unsafe sources if any shall be suitable marked and shown to concern team members.
9. The safe source including private sources are to be identified with proper testing for portability using the field testing kits available.

During Disaster Phase:

1. Keep ready stock of all relevant with the department
2. The team has to observe the required stock of H2S vials availability with GPs to check bacteriological contamination. Chronoscopes are to be kept available with the all vulnerable areas in order to verify the residual chlorine in the drinking water.
3. Ensure that the list of tankers is to be ready along with capacity of tankers, their address, contact members and distance from vulnerable areas.
4. Availability of generators and their owners along with contact address and distance to the vulnerable area are too ascertained by the assigned team members.

5. During the disaster awareness is to be created by the team members among people to construct and use ISLs in order to avoid open defecation during Cyclone/ Floods. The vulnerable villages are to be brought up to Nirmal Gram Purskar status.
6. Ensure that in the time of relief should be provide good water.

Post Disaster Phase:

1. The list of damages occurred during cyclone/ floods are to be identified in consolidation with the Team along with required budget for temporary / permanent restoration.
2. Ensure that permanent restoration may also be taken with local funds if the amounts required are small.
3. Monitoring of water quality should be restored or initiated immediately. Post disasters daily determination of the chlorine residual in public water supplies is sufficient.
4. Ensure that Chlorine and chlorine – liberating compounds are the most common disinfectants. Chlorine compounds for water disinfection are usually available in hit forms.
5. Chlorinate lime or bleaching power, which has 25% by weight of available chlorine when fresh, its strength should always be checked before use.
6. If the damage for water is urgent, or the repaired main cannot be isolated, the concentration of the disinfecting solution may be increased to 100 mg/ liter and the contact period reduced to 1hour.

RWS:

1. Collectors to notify that first priority of private vendors to provide Generators and tankers to Departments.
2. Rate Contract system to be evolved

5.11. A P Transco

Normal Phase:

Districts will work out strategy and priority of departments that should be provided power continuously before during and after the event. The order of the departments is communication/transmission stations, water works, hospitals, relief camps, shelters, railways and important road points.

During Disaster Phase:

1. Diesel generators will be pressed into service for providing lighting at important places like shelters, water supply points, hospitals etc
2. Within the affected district/mandal, all available personnel will be made available to the District Collector. If more personnel are required, the cut of station officers or those on Leave may be recalled.
3. All personnel required for Disaster Management should work under the overall supervision and guidance of District Collector.
4. Establish radio communications1 with district control room and departmental offices within the district.
5. All district level officials of the department would be asked to report to the collector.
6. Appoint one officer as "NODAL OFFICER - Power Supply" at district level.
7. Review and update precautionary measures and procedures and review with staff the precautions that have been taken to protect equipment and the post disaster procedures to be followed.
8. Assist the district authorities to make arrangements for standby generators in the following public service offices from the time of receipt of alert warning
    - Hospitals
    - Water department
    - Collectorate
    - Police stations
    - Telecommunications buildings
    - Meteorological stations.
    - Petrol stations

9. On the recommendations of the collector/district control room/" Officer-in- Charge – Power Supply" of the department in the district will instruct district staff to disconnect the main Electricity supply for the affected area
10. Dispatch emergency repair gangs equipped with food, bedding, tents, and tools. On the recommendations of the collector/district control room/" Officer-in- charge.

Post Disaster Phase:

1. Ensure that power supply is maintained at all important places in affected areas through diesel generators till regular supply is restored.
2. Depending on the present experience, Districts will plan and position additional diesel generators wherever necessary.
3. Updated long term restoration plans received from state level will be implemented in the affected areas. These plans will include up gradation of distribution network to with stand hazards from future disasters.
4. Establish temporary electricity supplies for transit camps, feeding centers, relief camps,
5. District control room and on access roads to the same.
6. Establish temporary Plan for emergency accommodations for staff from outside the area.

5.12. A.P. Civil Supplies Department

Normal Phase:

1. Storage of Bulk Stocks of food grains at strategic places. Strengthen the public distribution system. Store proportionate requirements at accessible and in accessible Places. Pre Disaster
2. DSO will review the stock position of essential commodities, at Dist., Mandal and Village levels and alert them to be in readiness to supply to vulnerable villages and relief camps in short notice.
3. Essential items should be kept ready for dispatch during the flood season.
4. Ensure supply of durable food items like bread, biscuits, dry food and fast food items to relief camps and vulnerable villages at short notice.

During Disaster Phase:

1. Local Civil supply Dept. officials should ensure adequate and timely supply of essential commodities to the Relief camps, and fair price shops at the vulnerable villages.
2. Ensure supply of dry food, bakery and other ready to eat items to the vulnerable areas and relief camps.
3. The concerned staff of the dept. should ensure even distribution to the affected people as per identification provided by Revenue dept. /MROs. Post Disaster
4. To maintain and provide adequate supplies of essential items to the people of affected villages and relief camps. Based on the new guidelines initiate steps for replenishment of stocks at Dist., Mandal and village supply points and godowns.
5. Recommend to higher authorities where ever new godowns/fair price shops are required, basing on the current experience.

5.13. Fire Department

The Department is capable of rendering life-saving service to the people involved in disasters both natural and man-made.

Normal Phase:

1. Modernization of fire fighting and rescue equipment.
2. Imparting training to the officers and staff of Fire & Emergency services in search and rescue operations at various specialized institutions including NIDM, NISA and NCDC etc.
3. Revamping of Civil Defense and placing it with resources and man power under the AP Fire & Emergency Services Department for training of community for effective response to cyclones and floods.
4. Conduct to mock drill.

Pre Disaster Phase:

1. All executive staff should be trained in Cyclone & Flood Rescue Operations.
2. All the recruits shall be trained in swimming and rescue operations in regular training itself.
3. A Rapid Rescue Force shall be formed with persons below 40 years of age for cyclone prone areas.
4. Periodical refresher courses must be organized for all staff members.
5. The department shall appoint Officers for 'different aspects of managing disasters.
6. Conducting training programmers for creating community awareness on Disasters like cyclones / floods.
7. Conducting periodical mock drills or exercises in vulnerable areas in association with other Government departments, local bodies, NG0s, volunteers and communities.
8. Identification and collecting of information with addresses and contact numbers of Public sector private agencies in the jurisdiction of fire stations having fire fighting Vehicles and rescue tools.
9. Obtaining the list of swimmers from other agencies via Fisheries Department.
10. Prepare action plans and attend Meetings on Disaster Management.
11. Listing vulnerable areas (of cyclone/flood) and cyclone shelters / safe places.

12. Checking the serviceability of the emergency and rescue equipment available in the Fire Stations of the District viz.
13. Rescue Tools, Dragon lights, life buoys, Life jackets, Manila Ropes, Cotton ropes, ladders and Breathing Apparatus sets etc.
14. Identification and collecting of information with addresses and contact numbers of public sector /private agencies having fire fighting vehicles and rescue tools.
15. Keeping stocks of POI
16. Keeping stocks of required extinguishing media viz., Foam compound, CO2 / DCP extinguishers.
17. Keeping one logistics vehicle for transporting rescue equipment and man power.
18. Duties of the Officers during Cyclones / Floods)

During disaster phase:

1. Conducting possible Search & Rescue Operations in co/lamed buildings; submerged marooned arms to rescue the living person's trarbed under debris, from, damaged buildings Structures and stranded on tree cops with the available manpower and resources.
2. Render first aid to the injured and providing; artificial respiration to the victims. Recovered from drowning and shifting them for further medical attention.
3. Take such immediate steps as may be necessary for the temporary support or minor demolition of damaged structures with the help of Roads & Buildings and Panchayath Raj Engineer.
4. Recover the dead bodies from the damaged buildings
5. Cut off supplies if utility services like LPG/electricity from damaged buildings.
6. Cutting of fallen trees to clear road blockages.
7. Bailout water from submerged areas, if required.
8. Arrest of spillage of hazardous fuels/chemicals.
9. Co-ordinate with over other agencies involved in the search and rescue operations.

Post Disaster Phase

1. Mobilizing the victims to safe places.
2. Identifying the vulnerability of collapse and damaged of buildings with the help of R&B / PR engineers & to prevent the re-entry of habitants/others.
3. Removal of fallen trees and other obstructions to facilitate transportation, restoration of electricity and other communications.
4. Salvage of house hold articles and other valuable things that are sub-merged and handing over to Revenue, Police Authorities.
5. Bailing out of flood water with heavy duty pumps and floating pumps in sub merged areas and from drinking water wells.
6. Assist local bodies in clearance of debris if there are any suspected victims.

Activities on Receipt of Warning or Activation of DDMP

1. Establish radio Communications with state control room, district control room and departmental offices within the district. All personnel required for Disaster Management should work under the overall supervision and guidance of District Collector.
2. Appoint one officer as "NODAL OFFICER- Communication" at the district level.
3. Review and update precautionary measures and procedures, and review with staff the precautions that have been taken to protect equipments and the post disaster procedures to be followed.
4. Fill department vehicles with fuel and park them in a protected area.
5. Inspect and repair all
6. Radio masts.
7. Anchorages
8. Foundations and cables
9. Poles
10. Overhead circuits.
11. Upgrade outside equipment to withstand wind speeds and other adverse weather conditions.
12. Designate at each exchange a member of staff (such as an inspector) as a disaster officer.
13. He must live in the area, be instructed in the likely effects of a disaster, and should be knowledgeable about necessary precautions and post-disaster procedures.

5.14.Bharat Sanchar Nigam Ltd. (BSNL)

Establish radio Communications with state control room, district control room and departmental offices within the district. All personnel required for Disaster Management should work under the overall supervision and guidance of District Collector.

Appoint one officer as "NODAL OFFICER- Communication" at the district level.

Review and update precautionary measures and procedures, and review with staff the precautions that have been taken to protect equipments and the post disaster procedures to be followed.

- House all electrical and switching equipment in damage proof buildings.
- All storage batteries should be charged fully during alert for long use in the post disaster period, when the electricity supply is not likely to be available.
- Establish an emergency tool kit at each exchange including.
- Cable cutlers
- Cutting pliers
- Spanners
- Ropes
- Ratchet Tension
- Crosscut Saws
- Pulley blocks with rope
- Hand gloves
- Check emergency tool kits and assemble any additional equipment needed.
- Provide at least two tarpaulins in every building with radio equipment
- Tele-printer equipment, and manual and auto exchanges.
- Install standby generators in all exchange buildings for the recharging of batteries.
- Secure all outside equipment to the extent possible.
- Arrange for the transport of additional vehicles for inspectors.
- Assemble equipment and emergency stocks of materials likely to be necessary for restoration of services.

Arrange emergency standby cable for dispatch to the affected area immediately after the disaster.

Remove fuses from the lines and disconnect the power supplies to equipment in disaster areas, if necessary.

Relief and Rehabilitation: Field Priorities:

Give priority and concentrate on repairs and normalization of communication in disaster areas.

- Identify the public services within the affected community for which communication links are most vital and establish a temporary service, if feasible.
- Establish a temporary communication facility for use by the public.
- Identify requirements, including
- Manpower needed
- Vehicles needed
- Materials and equipments needed.
- Begin restoration by removing and salvaging wires and poles from the roadways through recruited casual laborers.
- Establish a secure storage area for incoming equipments and salvaged materials.
- Carry out temporary building repairs for new equipments.
- Report all activities to head office.

Department of Information & Public Relations is an important link between the Media and people/Government during normal times. During natural calamities their roll is as equally important as with the other key department.

Pre-Disaster Phase:

1. The main task before the onset of the disasters is educate people who are living in vulnerable places with safety measures when such events occur well in advance news papers, AIR, TV photo exhibitions, Song & Drama programs, documentary through film shows speeches/lectures before group of people.
2. The involvement of local Non Governmental Organizations with their better communication skills should also be coordinated by the Department. To create awareness among people about DO's and DON'T's for the people should be printed as leaflets and distributed widely these should be read out in the gram sabhas at regular intervals. Slide shows should be organized in the Cinema Halls with pictorial signs.

3. Information about the warnings should be passed by the District PROs to the concerned authorities and the public t through PA system with the department. Correct information should be given to the reports in press briefings at the District Headquarters by the DPRO.
4. Information centre' should be organized at the district Headquarters and other control rooms. The set up of the O/other Dist. Public relations in the district should be directly involved with media of the entire district and public.
5. Message about hazard warnings, from the authorities, have to be passed on to the public through available communication systems. Timely information about precautionary measures through the print and electronic | media and see them. Messages reach the common man with in short time.
6. Information about the Hazard given in the warnings and their effect on the people assets' should conveyed through all means available. People in the vulnerable areas should be informed through local T.V. channels, PA cm with the department, NGOs and volunteers about the expected danger and advised to move to safer places, shelters, high ground etc. Information on establishment of relief shelters and medical camps, availability of and, medicines etc. need to be given to the people in the affected areas.
7. Daily press meetings should be held on measures taken to avoid false rumors, rich generally spread in such incidents. To action plans being executed by the various departments should be highlighted he media reports. Both good and negative points should be given for dissemination. Try to reduce the tendency of die media to sensationalize an event/ situation.

Post Disaster Phase:

1. The department should give information about relief camps, material supply for shelters, medical camps, distribution of rice, kerosene, compensation, etc., through media and other communication systems
2. Relief and rehabilitation information and feedback collected from the public about relief measures taken by the government may be sent to the higher authorities for further improvement in the implementation of relief measures. The department should arrange photo exhibition on damages For Press briefings and. for visit of the central teams which visit the affected areas to assess the losses.

During Disaster Phase:

To obtain the time to time information from the concerned authorities and organize timely dissemination to the public. Other tasks are;

1. To give wide publicity to the inculcate awareness among public through print and electronic media and also through communication systems.
2. Obtain the feedback reports and process to the concerned authorities for onward process
3. Conducting of press tours in the affected areas to the awareness of public.
4. Conducting press tours during the visits of VIPs/higher officials etc., in the affected
5. Maintain close liaison with media.

Check List

1. To prepare action plan on the incident occurred and have to be discharged in accordance with the check list from time to time and be alert for active functioning.
2. To assist the officers who communicate the feedbacks from the spot and to act according the as per information.
3. To pass on the time to time information to the field officers and Press about the incident and also to the higher authorities,
4. Keep good relations with the media persons and NGOs for wide publicity.
5. To establish information centre and to see the effective functioning with sufficient staff.

5.15. Information & public relations department

Department of information & public relations is an important link between the media and people/ Government during normal times. During natural calamities their role is as equally important as with the other key departments.

Pre-Disaster Phase:

1. The main task before the onset of the disasters is educate people who are living in vulnerable places with safety measures when such events occur well in advance through news papers, A.I.R., TV. Photo exhibitions, Song & Drama programs, documentary film shows speeches / lectures before group of people. The involvement of local Non Governmental Organizations with their better communication skills should also be coordinated by the Department.
2. DO'S and DON'T's for the people should be printed as leaflets and distributed widely. These should be read out in the gram sabhas at regular intervals. Slide shows should be organized in the cinema halls.
3. Information about the warnings should be passed by the District PROs to the concerned authorities and the public through PA system with the department. Correct information should be given to the reporters in press briefings at the District Headquarters by the DPRO.
4. Information centre should be organized at the District headquarters and other control rooms.
5. The set p of the O/o. the dist. Public Relations in the district should be directly involved with media of the entire district and public.
6. The set up of the O/o. the Dist. Public Relations in the district should be directly involved with media of the entire district and public.
7. Messages about hazard warnings, from the authorities, have to be passed on to the public through available communication systems.
8. Timely information about precautionary measures through the print and electronic media an s the messages reach the common man with in short time.

During Disaster

1. Information about the Hazard given in the warnings and their effect on the people and assets should convey through all means available.
2. People in the venerable areas should be informed through local T.V. channels, PA system with the department, NGOs and volunteers about the expected danger and advice to move to safer places, shelters, high ground etc.
3. Information on establishment of relief shelters and medical camps, availability of food, medicines etc. need to e given to the people in the affected areas.
4. Daily press meetings should be held on measures taken to avoid false rumors, which generally spread in such incidents.
5. The action planes being executed by the various departments should be highlighted in the media reports. Both good and negative points should be given for disseminations.
6. Try to reduce the tendency of the media to sensationalize an event/ situation.

Post Disaster Phase:

1. The department should give information about relief camps, material supply for shelters, medical camps, distribution of rice, kerosene, compensation, etc., through Media and other communication systems.
2. Relief and rehabilitation information and feedback collected from the public about relief measures taken by the government may be sent to the higher authorities for further improvement in the implementation of relief measures. The department should arrange photo exhibition on damages for Press briefings and for visit of the Central teams which visit the affected areas to assess the losses.
3. Conducting of press tours to the affected areas and maintaining liaison with the media is also one of the important roles of the department.

Check List

1. To prepare action plan on the incident occurred and have to be discharged in accordance with the check list from time to time and be alert for active functioning.
2. To assist the officers who communicate the feedbacks from the spot and to act according the as per information.

3. To pass on the time to time information to the field officers and Press about the incident and also to the higher authorities,
4. Keep good relations with the media persons and NGOs for wide publicity.
5. To establish information centre and to see the effective functioning with sufficient staff.

5.16. Horticulture

Planting trees is an easy and effective way to beautify our property, provide shade in summer and wind protection in winter. Tree is such a visible part of the landscape care must be taken to ensure proper growth conditions are maintained. A tree is far more difficult and expensive to replace, once mature in the landscape, than most shrubs.

Pre-Disaster Phase:

1. Plan and equip the Dist. to have latest technologies to assess the standing Horticulture position, with reference to probable disaster, mechanism to advice farmers for safe guarding and in case of losses, procedures to estimate the damages and to inform State authorities.
2. Ensure that regular feedback is provided by Mandals indicating seriousness of disaster, level of distress, position of standing Flowers and likely losses.
3. Districts will prepare a long term action plan for meeting relief requirements of farmers in vulnerable areas.
4. Prepare departmental action plans with all plausible mitigation measures to minimize Flowers losses with long term perspective Contingency flowers plans prepared by ANGRAU may be made available up-to mandal level in the month of May. Prepare vulnerability maps of villages likely to be prone in the mandal based on previous year's data (viz. irrigation sources wise areas prone to flood).
5. Existing seed storage godowns (Seed store/oil seed godownsetc) are to be repaired for storing of seeds during calamities.
6. Ensure that sufficient quantities of agricultural inputs such as seeds, fertilizers, pesticides, equipments and fodder are available at three levels. If necessary, they will be supplied at short notice at vulnerable areas.

During Disaster

1. The nodal officer should ensure that suitable instructions are issued to their field officers including their duties and function before, during and after disasters.
2. Coordinate with Mandals and Villages to get feedback on seriousness of disaster, level of distress, relief provided, steps taken for saving maximum standing crop, extent of flooded agricultural lands and estimated loss of crop.
3. Dist. will direct Mandals/Villages to be in close coordination with other line departments to ensure adequate relief is provided to the farming community.

Post Disaster Phase:

1. Ensure that adequate and timely relief/credit is made available to farmers for purchase of agricultural inputs through Govt. /private and easy loans through banks.
2. Seeds, fertilizers and pesticides should be provided at subsidized rates. Ensure all relief measures, credit facilities and inputs are made available continuously to farmers till their next crop is harvested.
3. Fodder should be supplied in sufficient quantities at low prices.

5.17. Municipal and urban development

The Housing & Urban Development Department is the nodal Department for ensuring proper and planned growth of cities and towns with adequate infrastructure and basic amenities. The continuous exodus of rural population to urban areas has contributed to the exponential growth resulting in severe strain on the existing infrastructure and subsequent demand for additional provisions. To keep pace with the growing demands of the urban area, the Department has been taking effective and adequate steps for efficient management & delivery of basic urban services like provision of Safe Drinking Water, Sanitation, Roads, Solid Waste Management, and Housing etc.

Further one of the important reforms during 1990s was the 74th Constitutional Amendment Act which empowered the Urban Local Bodies (ULBs) to function as Local Self Government. Thus, the Housing & Urban Development Department has got paramount responsibility to make the ULBs self sufficient and centers for good governance.

The Department strives to bring about both qualitative and quantitative changes in the living standard of the urban people by putting emphasis on the following areas:

1. Strengthening Urban Infrastructure, viz: Roads with Drain, Water Supply and Sewerage.
2. Efficient Solid Waste Management.
3. Development of Public Amenities including Public Park, Urban Greenery and
4. Conservation of Water Bodies.
5. Urban Reforms and e-Governance.
6. Urban Planning
7. Provision of Housing in the urban area and especially for the urban poor.
8. Skill up-gradation and financial support to the urban poor

Super cyclones with wind velocity of 250 km per hour and above have caused damages to even engineered structures at many places around the world. This was largely due to the absence of appropriate design criteria for construction of buildings and infrastructure which can withstand the pressures of such strong winds. Bureau of Standards of various countries have developed revised design norms which are followed for new constructions. However, the compliance standards of such norms have not been very effective largely due to inadequacies of properly trained engineers and masons who can supervise and raise such constructions.

Pre-Disaster Phase:

1. Measures necessary for prevention of disasters, mitigation, preparedness and capacity building in accordance with the guidelines laid down by the National Authority and the State Authority.
2. Integration into its development plans and projects, the measures for prevention of disaster and mitigation;
3. Provision of funds for prevention of disaster, mitigation, capacity-building and preparedness.
4. Drawing up mitigation, preparedness and response plans, capacity building, data collection and identification and training of personnel in relation to disaster management.

5. Review the enactments administered by it, its policies, rules and regulations with a view to incorporate therein the provisions necessary for prevention of disasters, mitigation or preparedness.
6. To bring awareness about disasters among the inmates of all institutions and residents of all communities in the district.
7. To pave way for strict enforcement of building rules in construction department and Contractors.

During Phase:

1. The Local Bodies will participate actively in the emergency as volunteers.
2. The Municipality will monitor the situation at ward level from time to time on sanitation, prevention of epidemics, safe drinking water facility, clearance of debris etc.. With the help of SHGs, SLFs, AWWs and Public Health Workers.
3. Establish communication links with ERCs and Search & Rescue Teams in all Municipal Corporations and alert them to be in stage of readiness.
4. Make transport arrangement for mobilization of all emergency
5. Make arrangements for logistic support to all emergency response team.

Post Disaster Phase:

1. Ensure maintenance of record, timely reporting and information management.
2. Depute additional officers and supporting staff to cyclone affected areas from non-affected areas (if required) to accelerate the rescue and relief operations.
3. Ensure that key administrative and lifeline buildings are brought back to operation quickly
4. The Municipalities should give information about relief camps, material supply for shelters, medical camps, distribution of rice, kerosene, compensation, etc., through media and other communication systems
5. Ensure restoration of traffic movement where ever possible by quick repair of breaches. Inspection of roads and removal of traffic obstruction.
6. Inspection of roads for assessment of damages and reporting in higher authorities and preparation of its estimations.

7. Coordinate with State and plan for providing adequate number of drains by the side of roads, particularly considering the past experience.

6.0 Shelter Management

Shelter management is an important aspect of disaster management. The person in charge of shelter has to reach the shelter prior to the arrival of inmates to the shelter along with the team member's allotted to him. The team has to plan for shifts so that round the clock services can be offered at shelter. The next important action is to establish a communication link with DEOCs and LEOC attached to the shelter. Shelter manager has to oversee the arrival of required resources like food, sanitation facilities, power backups etc. The quantity arrived must be checked against the requirements calculated based on the capacity of the shelter. Before the people arrive at the shelter, the shelter in charge has to earmark the space available within the shelter for storage, cooking etc.

Once the person in charge of shelter satisfies with the resources and safety of the shelter space, it is informed to DEOC and LEOC for commencing the evacuation process. The people arrived at the shelter has to be registered preferably in digital format and informed about the instructions to be followed during their stay at the shelter and communicate the same to the LEOC or SAR groups for further action.

Shelter manager segregate the people requiring special attention like requiring medical aid, or suffering with chronic diseases, pregnant woman, infant etc to offer special care at shelter. Their details are informed to the DEOC and medical teams for keeping them ready to attend such case in case of an emergency arises. Shelter manager shall focus on the sanitation facilities at the shelter to avoid further complications. Shelter manager make arrangements for equal and proper distribution of facilities available at shelter.

7.0 Restoration Phase

Restoration phase is the phase shall be planned using a modular approach. The teams ready with resources are to be positioned very close to affected areas, so that once the cyclone crosses the area, they can reach the affected areas for taking up restoration. Priority shall be given to the highway clearance and then to the restoration of basic amenities like power, communication, water supply and medical aid.

The restoration teams shall be in constant touch with DEOCs, LEOCs for getting updates on the service failures and a team coordinating restoration operations shall prioritize the requests received and allocate a restoration team to attend to it.

The failures possibly leading to further destruction and possible hazard to life need to be attended to first.

Skilled workmen list shall be made available to general public to restore their services within their homes.

8.0 Household Emergency Management Plan

Only 30 to 40% of the populations are actually seeking help from government authorities in any disaster. If, proper awareness is provided most of the household can plan their safety on their own. One important aspect of this is making the people to have an emergency plan kept ready for them before any disaster hits them.

People shall be encouraged to have a disaster or emergency kit ready at their homes. All valuables, important documents, phone numbers of kith and kin etc shall be kept ready, so that in case of emergency they can rescue themselves. Each household has to be trained to prepare an evacuation plan for themselves which is known to all the members of the family. It shall include, the place where they can reunion, how to reach there and what are the things they need to carry there.

The household emergency kit may include following:

CYCLONE EMERGENCY KIT		
Sl.N	**Item**	**Qty**
1	First Aid Kit	1
2	Extra Money	-
3	Knife	1
4	Drinking Water	20 litres Minimum (more if required)
5	Medicines	Important medicines for daily use of chronic patients
5a	Cotton	As per requirement
5b	Diarohhea Medicines	1 Bottle
5c	Antiseptic Solution	1 small bottle
5d	Hydrogen Peroxide solution	1
5e	Bandage (Large Size)	1
5f	Odomos (mosquito repellent)	2
5g	Crepe Bandage(large)	2
6	Trapaulin	1
7	Rope	10 Mts (min)
8	Non-perishable food items	In packed condition
8a	Bread	3 Packets
8b	Milk Tetra Packs	3 Litres

8c	Sugar	As per requirement
9	Important Documents in a Sealed plastic Bag	Passport, License, Certificates, Land related documents etc
10	Mobile phone and Charger (if available)	1
11	Torch (with spare one set of bateries)	1
12	Small Transistor (with weather station)	1
13	Gum Boots	1
14	Infant Carrier (if required)	1

9.0 Building Baseline Database

The actions pre-defined can be performed with expected efficiency levels if the officer attending the action is provided with all required resources like men, material, and equipment. So the success of managing the event lies on how efficiently one can anticipate the resource requirement, number of people to be attended to , number of possible failures. As the current day technology permit to identify the vulnerable areas on map, the information related to the features falling within the areas likely to be affected needs to be available in detail. Similarly, the resources requirement can be estimated, if the domain experts from various line departments standardize the resource requirement for 100 population or 100 sq.Km of area etc. These standardized values help in modular planning during preparedness phase.

So the database for cyclone management shall contain the data related to vulnerable population, shelter details like their location, capacity etc, resource requirement for offering services by respective line departments for every 1000 population or 100 sqKm of area to be served depending upon the nature of pre-defined actions entrusted to each of the department.

Similarly , if the feature data bases updated with ownership details are updated during the preparedness phase, damage assessment and quick disbursal of relief immediately after the event is possible as only information that need to be collected post event is about the current status of the asset under consideration.

Formats for collecting important information on these aspects are listed as part of annexure to this document. Departments, may also add some more details if they feel required as part of planning process. Once such databases of all the vulnerable villages are available a web based module can be developed to automate the planning process envisaged.

Annexure

Annexure 1: Estimating the area and population likely to be affected by cyclone

The main information any disaster manager at any level during a disaster would like to know for better management of the event include area under threat if possible with degree of impact associated and likely duration of the event. If this information is available with lead time then the management of the event can be taken up with more efficiency.

In case of cyclones, the most severely affected area is the area close to the landfall point. Maximum winds on either side of the landfall point will be greatly damaging the property. This area associated with maximum damage possibility shall be estimated as under:

Indian Meteorological Department (IMD) provides information related to landfall point and the radius of maximum winds. But the present level of land fall point by IMD is associated with an error of about 75km in 24 hour forecast. As the cyclone crosses the coast its potential to damage the features will start coming down as it progresses in land say by 25km from coast line. Therefore total area likely to be severely affected is equal to 25x (2xradius of maximum wind) square km. In most of the cases the radius of maximum wind will be around 50km. Thus, the more severely affected area can be identified as 50km on either side of forecasted landfall point. Therefore, considering error in forecast, approximately an area of 3125 Sq Km shall be put on high alert. Another 50km on either side of this will be moderately affected. Thus moderately affected area on either side can be calculated as 25x50 equal to 1250 Sq km. If these areas are multiplied by population density, the approximate number of people to be supported can be arrived.

So the preparation to face a cyclone situation need to be planned for a population of approximately 7,81,000 falling in severely affected areas and another 3,12,500 population in moderately affected areas. Out of this, around 40 percent populations need to be sheltered. Therefore, around 5,00,000 population need to be managed in shelters at least for 3 days.

So the preparation shall be done based on a modular approach i.e., calculating requirements for every 1000 people within the shelters and outside the shelters. Similarly, requirements for restoration of services need to be estimated for every 1000Sq Km of area. These estimated resources need to be strategically, positioned close to the likely affected areas which are defined as 25km from coast as per the cyclone guidelines Prepared by NDMA.

Annexure 2: Formats for Data Collection

Table 1: Listing Of Weak links In Vulnerable Areas (To be Updated annually)

DEPARTMENT	DISTRICT	MANDAL	VILLAGE	NAME OF ANTICIPATED WEAK LINK IN SERVICE OFFERED BY THE DEPARTMENT	DESCRIPTION FOR POSSIBLE FAILURE	QTY (NO/ LENGTH/AREA)	RESOURCE REQUIRED
R&B	EG	RAJANAGARAM		CAUSE WAY ON --- HIGHWAY	WEAK BANK ON RIGHT SIDE AT ---KM	100M	
IRRIGATION	PRAKASAM			MINOR IRRIGATION TANK AT ---	WEAK BUND ON LEFT SIDE	20M	
TRANSCO	WG			30% OF POLES TO BE UPROOTED	IN CASE OF GALES EXCEEDING 75KMPH	150	

Table 2: Department Wise Action List for Different Phases (One time listing of duties)

DEPARTMENT									
PHASE	**STATE**			**DISTRICT**			**MANDAL**		
	DESIGNATION	**ACTIONCODE**	**ACTION**						
PREPAREDNESS		S1	A1	DESIGNATION	ACTION CODE	ACTION	DESIGNATION	ACTIONCODE	ACTION
		S2	A2		D1	A1		M1	A1
		S2	A1			A2			A2
			A2		D2	A1		M2	A1
		S3	A1			A2			A2
			A2			A3			
			A3						
ON ALERT	DESIGNATION	ACTIONCODE	ACTION	DESIGNATION	ACTION CODE	ACTION	DESIGNATION	ACTIONCODE	ACTION
		S1	A1		D1	A1		M1	A1
			A2			A2			A2
		S2	A1			A3			A3
			A2		D2	A1			A4
		S3	A1			A2		M2	A1
			A2						A2
DURING EVENT	DESIGNATION	ACTIONCODE	ACTION	DESIGNATION	ACTION CODE	ACTION	DESIGNATION	ACTIONCODE	ACTION
		S1	A1		D1			M1	
			A2		D2			M2	
		S2	A1						
RESTORATION	DESIGNATION	ACTIONCODE	ACTION	DESIGNATION	ACTION CODE	ACTION	DESIGNATION	ACTIONCODE	ACTION
		S1	A1		D1			M1	
			A2		D2			M2	
		S2	A1						

Table 3: Resource Requirement (Updated during preparedness phase)

DEPARTMENT							
PHASE	ACTION CODE	LEVEL (STATTE/ DISTRICT/ MANDAL)	RESOURCE CODE	QTY REQUIRED	QTY AVAILABLE	SHORTFALL	SOURCE FOR REPLENISHMENT
PREPAREDNESS	A1	STATE	R1				
			R2				
			R3				
	A1	DISTRICT	R1				
			R2				
			R3				
	A1	MANDAL	R1				
			R2				
			R3				
ON ALERT	A1	STATE	R1				
			R2				
			R3				
	A1	DISTRICT	R1				
			R2				
			R3				
	A1	MANDAL	R1				
			R2				
			R3				
DURING EVENT	A1	DISTRICT	R1				
			R2				
			R3				
	A1	MANDAL	R1				
			R2				
RESTORATION	A1	DISTRICT	R1				
			R2				
			R3				
	A1	MANDAL	R1				
			R2				

Table 4: Team Formation (Updated during preparedness phase)

DEPARTMENT							
PHASE	TEAM CODE	TEAM PURPOSE	ROLE	NAME OF OFFICER	DESIGNATION	ASSIGNED TO	CONTACT DETAILS
						VILLAGE / MANDAL/DISTRICT	
PREPAREDNESS	T1		TEAM LEADER				
			TEAM MEMBER1				
			TEAM MEMBER2				
ON ALERT	T1						
DURING EVENT	T2						
	T3						
RESTORATION	T1						
	T2						

Table 5: Shelter (Updated annually)

trict	Mandal	Village	Shelter Code	Shelter Type	Area	Capacity	Year Of Construction	Current Status	Access	Water Supply Available or not	If Available total Capacity of PWS schemes	Sanitation Facility	No Of Toilets	Storage Facility	Storage Capacity	Alternate Power	Gen Set Capacity	Fuel Type	Fuel Rating	Fuel Capacity	Gen S Worki

Table 6: Habitation (Updated Annually)

District	Mandal	Village	Area	Total Population	Population requiring evacuation	Road length	crop	Big trees	Towers			fuel Outlets	Bore wells	Total PWS scheme Capacity
									Ele towers	Ele poles	Communication Towers			

Table 7: Power (Updated after the event)

District	Mandal	Villages	Item/Services	Total Number of Units	No. o unit damaged	Population affected	No. of Restoration Teams operated	Recovery measures	Time taken for Restoration
			Feeder						
			Transformers						
			HT Lines						
			LT Lines						
			Electric Poles						

To be planned after initial damage assessment by departments

Table 8: Health (Updated after the event)

District	Mandal	Village	No of Buildings damaged	No of people Attended	Drugs and medicines perished	No of Ambulance damaged	No of Teams Operated	No of days to return Normalcy	No of Generators Hired

Table 9: Water (Updated after the event)

District	Mandal	Village	Type	Total Numbers	No. of units affected	Recovery Measures	Time taken for Restoration
			Well				
			Bore wells				
			Water Supply Disrupted				
			Contamination				
			OHSR damaged				
			GLR Damaged				
			Sump damaged				
			Pipe lines damaged				
			Stand post damaged				
			Cattle trough damaged				
			Hand pump				

Table 10: Road and Transport (Updated after the event)

District	Mandal	Village	Road damage	Total Length in KM	Km Affected	Recovery Measures	Time Taken for Restoration
			Panchayat				
			District roads				
			Municipalities				
			State Roads				
			National Highway				

Table 11: Communication (Updated after the event)

District	Mandal	Village	Type	Total Number of Towers	Tower Damaged	Recovery Measures	Number of Teams operated	Time Taken for Restoration
			Landline connectivity					
			Mobile connectivity					
			Wireless Tower					
			Radio					

Table 12: Housing (Updated after the event)

District	Mandal	Village	Total Units			Partial Damage			Fully Damaged / Collapsed		
			Thatched	Tiled	RCC	Thatched	Tiled	RCC	Thatched	Tiled	RCC

Table 13: Public Utilities(Updated after the event)

District	Mandal	Village	Public Buildings	Total Units	Fully Damaged/ Collapsed (No. of Unit)	Partial damage (No. of units)
			Panchayat			
			Educational Buildings			
			Anganwadi			
			Hospitals			
			Office Buildings			
			Market			
			Police station			
			Community Halls/ Function plots			

Table 14: Agricultural (Updated after the event)

District	Mandal	Village	Crop type	Total Extent	Fully Damaged due to		Partial Damage due to	
					Wind	Inundation	Wind	Inundation

Table 15: Irrigation

District	Mandal	Village	Canal Damages in Km		Minor Tanks in Km		Time taken for Restoration
			Total Length	Length Damaged	Total Number of MI Tanks	No of Tanks Damaged / breached	

Table 16: Livestock (Updated after the event)

District	Mandal	Village	Big Animals		Small Animals			Poultry	Other Livestock
			Cattle	Buffaloes	Sheep	Goats	Pigs		

Annexure 3: Important stores /Equipments required for Cyclone Response

Dept Code	Dept Name	Item Code	Item Name
01M	Civil Supplies	015	Cooking Utensils
02M	Debris clearance & Dewatering	021	Chipping Hammer
02M	Debris Clearance & Dewatering	022	Chain Saw-Diamond
02M	Debris Clearance & Dewatering	023	Chain Saw-Bullet
02M	Debris Clearance & Dewatering	024	Pneumatic Chisel
02M	Debris Clearance & Dewatering	025	Cutters- Hydraulic
02M	Debris Clearance & Dewatering	026	Cutters-Battery
02M	Debris Clearance & Dewatering	027	Steel Cutter/Grinder
02M	Debris Clearance & Dewatering	028	Spreaders-Hydraulic
02M	Debris Clearance & Dewatering	029	Pump - high pressure, portable
02M	Debris Clearance & Dewatering	030	Pump - floating
02M	Debris Clearance & Dewatering	031	Concrete Cutters
02M	Debris Clearance & Dewatering	032	Chain saw concrete cutters
02M	Debris Clearance & Dewatering	033	Air Compressor
02M	Debris Clearance & Dewatering	034	Submersible Pumps
02M	Debris Clearance & Dewatering	035	Dewatering pumps
03M	Public Works & Engineering	036	Trucks - Aerial Lift
03M	Public Works & Engineering	037	Bulldozers wheeled/chain
03M	Public Works & Engineering	038	Dumper
03M	Public Works & Engineering	039	Earth movers
03M	Public Works & Engineering	040	Cranes - Heavy Duty, Fork type
03M	Public Works & Engineering	041	Tipper - Heavy Duty
03M	Public Works & Engineering	042	Recovery Vans Beam Type
03M	Public Works & Engineering	043	Snow Beaters wheeled
03M	Public Works & Engineering	044	Equipment Toeing Tender
03M	Public Works & Engineering	045	Excavators
04M	Search & Rescue Floods	046	Rescue back boards
04M	Search & Rescue Floods	047	Diving suit
04M	Search & Rescue Floods	048	Under water BA set
04M	Search & Rescue Floods	049	Lifebuoy
04M	Search & Rescue Floods	050	Life Jackets
04M	Search & Rescue Floods	051	Basket Stretcher
04M	Search & Rescue Floods	052	Pneumatic Rope Launcher
04M	Search & Rescue Floods	053	Boats
04M	Search & Rescue Floods	054	Inflatable boat (12 persons)
04M	Search & Rescue Floods	055	Fiber boat (12 persons)
04M	Search & Rescue Floods	056	Motor Boats
04M	Search & Rescue Floods	057	Motor Launch
04M	Search & Rescue Floods	058	Country Boats
04M	Search & Rescue Floods	059	Breathing apparatus - self contained
05M	Fire & Police	060	Clothing - Chemical & Fire protective
05M	Fire & Police	061	Breathing apparatus - self contained
05M	Fire & Police	062	Fire Extinguishers
05M	Fire & Police	063	Fire Tender
05M	Fire & Police	064	Water tenders
05M	Fire & Police	065	Water bowsers
05M	Fire & Police	066	Foam Tender

05M	Fire & Police	067	Rescue Tender
05M	Fire & Police	068	Control Van
05M	Fire & Police	069	Hydraulic Platform
05M	Fire & Police	070	Turn Table Ladder
05M	Fire & Police	071	DCP Tender
05M	Fire & Police	072	Hazmat Van
05M	Fire & Police	073	B.A. Van
06M	Public Health & Medical Aid	074	Hand stretchers
06M	Public Health & Medical Aid	075	Stretchers with trolley
06M	Public Health & Medical Aid	076	Wheel chairs
06M	Public Health & Medical Aid	077	Tracheotomy set
06M	Public Health & Medical Aid	078	Venesection set
06M	Public Health & Medical Aid	079	Dressing tray
06M	Public Health & Medical Aid	080	First Aid kit
06M	Public Health & Medical Aid	081	H2S vials
06M	Public Health & Medical Aid	082	Bronchodilators
06M	Public Health & Medical Aid	083	Vaccines
06M	Public Health & Medical Aid	084	Portable oxygen cylinders
06M	Public Health & Medical Aid	085	Portable ventilators
06M	Public Health & Medical Aid	086	Portable x-rays
06M	Public Health & Medical Aid	087	Portable ultrasound
06M	Public Health & Medical Aid	088	Portable ECG
06M	Public Health & Medical Aid	089	Portable suction unit
06M	Public Health & Medical Aid	090	Mobile medical vans with build in OT unit
06M	Public Health & Medical Aid	091	Antibiotic Medicines
07M	Communication	092	VHF Sets Static
07M	Communication	093	VHF Sets Mobile
07M	Communication	094	UHF Sets Static
07M	Communication	095	UHF Sets Mobile
07M	Communication	096	Walkie Talkie Sets
07M	Communication	097	HF Sets Static
07M	Communication	098	Satellite Phones
07M	Communication	099	Emergency Mobile Towers
07M	Communication	100	Emergency Mobile charging units
08M	Water & Sanitation	101	Phenoil
08M	Water & Sanitation	102	Bleaching Powder
08M	Water & Sanitation	103	Chlorine tablets
08M	Water & Sanitation	104	Water filter
08M	Water & Sanitation	105	Water tankers
08M	Water & Sanitation	106	Reservoirs treatment tank
08M	Water & Sanitation	107	Alternate pipelines
09M	Transport	108	Equipment Toeing Tender
09M	Transport	109	Bus (Public/Pvt)
09M	Transport	110	Truck
09M	Transport	111	Tractor
09M	Transport	112	Paver
09M	Transport	113	Road Roller
10M	Shelter	114	Tent 80 Kgs
10M	Shelter	115	Tent 40 Lbs
10M	Shelter	116	Tent MK-III Private
10M	Shelter	117	Tent Store
10M	Shelter	118	Tent extendable 4 meters
10M	Shelter	119	Tent extendable 2 meters
10M	Shelter	120	Tent Arctic
10M	Shelter	121	Tarpaulin
10M	Shelter	122	Plastic Sheet

10M	Shelter	123	Polythene Sheet
10M	Shelter	124	Corrugated Galvanized Iron sheet
10M	Shelter	125	Polypropylene Corrugated Unifold shelter
10M	Shelter	133	Gas cylinders
10M	Shelter	134	Air Matresses
10M	Shelter	135	Blankets
11M	Generator & Fuel Supplies	136	Generator
11M	Generator & Fuel Supplies	137	5kW
11M	Generator & Fuel Supplies	138	10kW
11M	Generator & Fuel Supplies	139	100kW
11M	Generator & Fuel Supplies	140	400 kW
11M	Generator & Fuel Supplies	141	500 kW
11M	Generator & Fuel Supplies	142	600 kW
11M	Generator & Fuel Supplies	143	1000kW
11M	Generator & Fuel Supplies	144	1250kW
11M	Generator & Fuel Supplies	145	1500kW
11M	Generator & Fuel Supplies	146	2000kW
11M	Generator & Fuel Supplies	147	2500kW
11M	Generator & Fuel Supplies	148	Diesel
11M	Generator & Fuel Supplies	149	Petrol
11M	Generator & Fuel Supplies	150	K. oil
11M	Generator & Fuel Supplies	151	LPG Cylinders
11M	Generator & Fuel Supplies	152	HSD Oil
12M	Power	153	Emergency Restoration towers
12M	Power	154	Phasor Measurement Units
12M	Power	155	Electric Poles
12M	Power	156	Transmitters

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POINTS NOTED DURING SOP MEETING HELD ON 15.04.2015

Special CS-Planning Department:

- Cyclone Shelters verification and review mechanism to be established
- Insurance Mechanism to be in place.
- 2 categories of Insurance can be thought: 1) General Insurance 2) Business Insurance
- Mechanism to be evolved to set Normalcy in very short time on the lines of Developed Countries

Director-DM Department:

- Nodal Officers to be appointed in each Department
- Internal SOPs to be prepared by the Departments
- IDRN to be updated for Resource Inventory

Planning Department:

- Standards to be evolved for each kind of activity
- Shelter Details to be fully updated by mapping area of catering
- Identify weak links in Vulnerable areas
- Action Lists to be specifically prepared
- Resource requirements to be assessed in advance
- Teams to be formed

Revenue Dept:

- Strong and fail proof Communication Net Work to be established in Vulnerable areas
- Route Maps of Cyclone Shelters to be displayed in Villages, wards and also on Website
- Capacity Building of all Stakeholders is very critical

Animal Husbandry:

- Animal Cyclone Shelters to be constructed
- Sufficient Feed to be stored
- Local Bodies to take care of removal of Carcass of dead animals

R&B Department:

- Bailey Bridges to be fabricated for ready use. Already 8 such proposals are under way
- Power saw Cutters, Earth Movers, etc can be procured by Department itself for emergency use.

- Weak Roads & Bridges are to be identified and mapped so that immediate restoration can take place

Agriculture Dept:

- Village level Crop Patterns and extent to be mapped in every season in advance to assess the damage easily
- Separate budget provision for Enumeration

Medical & Health:

- Back up Electricity in PHCs and Referral Hospitals
- Hospitals to own generators

RWS:

- Collectors to notify that first priority of private vendors to provide Generators and tankers to Departments
- Rate Contract system to be evolved